

**An Examination of Outdoor Experience in the Development of Character in
Young Adults With Type 1 Diabetes**

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**Submitted in Partial Fulfillment
of the requirements for the degree of
Master of Education**

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Abstract

Connected in Motion is a not for profit organization serving young adults with Type 1 diabetes. The organization hosted outdoor and experiential Type 1 diabetes education programs in January of 2009 and 2010. The weekends provided non-clinical alternative Type 1 diabetes education to the underserved population of young adults within Canada. Six women living with Type 1 diabetes and between the ages of 22 and 30 participated in the Winter Slipstream weekends participated in this phenomenological research study. Through semi-structured interviews and artifact-elicitation interviews, the lived experiences of the participants were examined. Data analysis indicated that the sense of community created through outdoor programming and experiential education for young adults with Type 1 diabetes stimulated the development of self-efficacy and participant-perceived improvement in Type 1 diabetes self-management. There was no indication that outdoor and experiential Type 1 diabetes education had any impact on the development of autonomy among participants. Recommendations are made to encourage the successful implementation of further alternative (non-clinical) Type 1 diabetes education programs for young adults living with Type 1 diabetes.

Acknowledgments

I would like to take the time to thank the many people who have made the completion of this thesis possible. First and foremost, I would like to thank Dr. Mary Breunig for her unwavering guidance and selfless support throughout this process. The generous amount of time and encouragement she provided me with pushed me to become a better researcher, writer and educator. I am truly grateful for her commitment to ensuring that my work was the best it could possibly be. Thank you to my committee members, Anne Elliott and Ann-Marie DiBiase, for their interest in my work, their support and their constructive feedback. I am grateful to Larry Bradley for being my biggest encouragement throughout the past three years and for helping me through the challenging times and celebrating my successes. Thank you to Chloe Steepe of Connected in Motion for her genuine excitement about this research and her courage to live her dream and truly make a difference to many people living with Type 1 diabetes. Thank you to my closest friends (especially to Sarah Ketcheson for your inspiration to take on this research project in the first place!) Lastly, I owe a great deal of gratitude to my family who has always enthusiastically encouraged me to follow my dreams.

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CHAPTER ONE: INTRODUCTION

Imagine what it would be like to wake up each day with diabetes; to question how and why you got the disease and to know that there is no answer; to live life balancing exercise, diet and life-saving insulin doses; to worry about what other people may think when they see that you are constantly attached to an insulin pump or are carrying syringes and vials of insulin with you, wherever you go; or to always know that there is serious risk for life altering complications for all individuals living with Type 1 diabetes. These are just a few of the challenges faced by young adults with Type 1 diabetes throughout North America—challenges that I can relate to, first hand.

In brief, diabetes refers to a disorder in which the body has trouble regulating blood glucose levels (Juvenile Diabetes Research Foundation, 2009). There are many types of diabetes; however, the most common forms are: Type 1 and Type 2, both of which were defined and discussed further in subsequent sections. Diabetes is the fourth leading cause of death in developed countries (International Diabetes Federation, 2009), and the number of diabetes-related deaths is expected to increase by as much as 50% in the next ten years (World Health Organization, 2011). An estimated 285 million people, 6.6% of the world's population, are living with some form of Diabetes (International Diabetes Federation, 2009). That number is expected to reach 439 million individuals by 2030 (International Diabetes Federation, 2009). It was because of these alarming trends and because of my personal connection with the disease that I chose to place the individual with diabetes at the centre of my research.

Background of the Problem

For individuals with Type 1 diabetes, the challenges of living with the disease become paramount during the young adult years (Lermer-Garber et al., 2003), specifically when individuals are between 18 and 30 years of age. Empirical evidence supports the notion that Type 1 diabetes during young adulthood creates unique challenges (Lermer-Garber et al., 2003). In fact, most view only the challenges associated with this medical condition (Boileau, Aboumrad & Bougneres, 2006; Boland, Grey, Oesterle, Fredrickson & Tamborlane, 1999; Sulli & Shashaj, 2006). It was my contention that Type 1 diabetes should not always be viewed in such negative ways. I believed that Type 1 diabetes was viewed throughout the literature too often as a challenge or an inconvenience. Interestingly, I saw the opposite view prevail among many of the individuals living with the disease—individuals who saw the potential born from living with the disease. Perhaps there was benefit in choosing to view Type 1 diabetes not as a limiting condition, as it was viewed by so many at the time of this research, but as an opportunity for incredible personal growth and development (Hurley & Shea, 1992; Wangberg, 2008; Wysocki et al., 2006).

What was needed for this change in perception to occur? And what were some of the benefits to people perceiving the personal growth and development potential of having diabetes? What had to happen to allow more individuals to see past the challenges of living with a chronic illness and to see diabetes as an opportunity? Perhaps, as suggested by Vollrath, Landolt, Gnehm, Laimbacher and Sennhauser (2007), the answer lies in the development of certain character traits. But then the question became, what fostered this development of character? Empirical evidence

existed linking the development of character to participation in outdoor experience (Hattie, Marsh, Neill & Richards, 1997) but how and why did this development occur? What other benefits might have come from such developments? An investigation of these questions served as the primary purpose of this research.

My interest in young adults with Type 1 diabetes and the ways in which outdoor experience influenced character development was fostered after the discovery that very few support groups exist for the young adult population, and that those that do exist are centred in hospital clinics serving adult patients exclusively. Although classified as adult clinics, these centres often served primarily elderly clientele. I was convinced that there were other young adults with Type 1 diabetes who were interested in staying both connected and active, yet who were unable to find support that they needed within their communities. It was then that I came across the organization, Connected in Motion. Connected in Motion is a group of young adults who are living active, healthy lives with Type 1 diabetes (Connected in Motion, 2009). The group strives to:

Unite people with Type 1 diabetes who live, or want to live healthy, active lifestyles; get people outside, active, and engaging in physical activity—the ultimate tool for managing diabetes and reducing the risk of complications and further disease; provide an environment for informal experiential learning of diabetes management strategies; open lines of communication and create networks to encourage a free-flow of knowledge and personal experience between people living with Type 1 diabetes; assist people with Type 1 diabetes in gathering the tools they need to overcome the challenges they face; and to

encourage and inspire people to take control of their diabetes. (Connected in Motion, 2009)

Connected in Motion uses outdoor adventure-based activities as a forum for connecting young adults with Type 1 diabetes.

Founded in 2008 by outdoor enthusiast, Chloe Steepe, the group saw early success. Chloe was diagnosed with Type 1 diabetes when she was eighteen years old. I was privileged to join 30 young adults with Type 1 diabetes at the group's first event—a winter camping weekend entitled Winter Slipstream—in January of 2009. Since then, Connected in Motion members had participated as a team in several adventure races, the Scotiabank Marathon and the Ottawa Marathon. The group had been rock climbing, been to various conferences and been involved in the celebration of World Diabetes Day. Members of the group had much positive feedback regarding Connected in Motion's events. One participant contacted Chloe Steepe and stated, "Connected In Motion will be a turning point for me in my life. Over one weekend I have discovered that having diabetes can truly be inspirational."

The early success of the group prompted me to question the ways in which its programming was implemented since no formal research had been undertaken to explain the success of the program or to explain the factors and processes of outdoor experience that may hold the potential to cause change in the lives of the young adults with Type 1 diabetes. Connected in Motion provided a base from which I drew participants for this study, collected their experiences and examined outdoor experience in relation to the development of character among young adults with Type 1 diabetes.

Theoretical Framework

This study is framed by Bandura's (1978) Social Cognitive Theory with a specific focus on reciprocal determinism and the role the theory's constructs play in behaviour change. Briefly, Bandura's Social Cognitive Theory was developed in 1978 as an extension of his (1977) Social Learning Theory. The Social Cognitive Theory (Bandura, 1978) suggests that human behaviour is influenced reciprocally by environmental and personal factors and challenges the previous constructs of the Social Learning Theory (Bandura, 1977), which suggested that behaviour change is influenced in an exclusively unidirectional manner. Bandura's (1978) Social Cognitive Theory and the ways in which this theoretical framework frames and informs this study are outlined in detail in Chapter Two.

Statement of the Problem

The aim of this study was to understand how outdoor experience influences the development of character, in particular self-efficacy and autonomy, among a group of young adults, between the ages of 18 and 30, living with Type 1 diabetes, as well as to evaluate how groups such as Connected in Motion may provide these experiences. Through this research, the following questions were explored:

1. What influence do outdoor experiences have in the development of self-efficacy and autonomy among young adults (aged 18-30) with Type 1 diabetes in Canada?
2. How might the development of self-efficacy and autonomy affect diabetes management in young adults with Type 1 diabetes in Canada?

3. Is the nature of outdoor experience influential in the development of autonomy and/or self-efficacy among young adults with Type 1 diabetes in Canada?
4. Does participation in the non-profit organization Connected in Motion's outdoor events influence the development of self-efficacy and autonomy in young adults with Type 1 diabetes?

Purpose and Rationale of the Study

The large majority of individuals with Type 1 diabetes are diagnosed as children (Juvenile Diabetes Research Foundation, 2009). At the time of this study, extensive training and support programs existed for children with Type 1 diabetes (Canadian Diabetes Association, 2009; Children with Diabetes, 2009; Juvenile Diabetes Research Foundation, 2009), but there had been marginal development of programs for adolescents and even less for young adults. As a young adult living with Type 1 diabetes I witnessed the disengagement that is experienced during the transition from the pediatric to adult healthcare system. I believed that providing programming for young adults with Type 1 diabetes would be extremely beneficial to this population.

Additionally, providing outdoor programming, which has been shown to enhance the development of character (Caulkins, White & Russell, 2006; Harper, Russell, Cooley & Cupples, 2007; Hattie et al., 1997) may benefit young adults with Type 1 diabetes by promoting better health management (Hill-Briggs, 2003). One of the concepts of Connected in Motion—providing outdoor experience for young adults with Type 1 diabetes—had been enthusiastically accepted throughout the diabetes community in Ontario, as well as across Canada and throughout the United States (Connected in

Motion, 2009). Results derived from the present study sought to provide support for the involvement of young adults with Type 1 diabetes in outdoor experiences as well as to provide Connected in Motion with support for the organization's mandate, which would ultimately promote its progress and growth. This support was also expected to encourage the creation of new and innovative means to promote healthy living for young adults with Type 1 diabetes.

Scope and Limitations of the Study

There is much potential with regard to research involving outdoor experience and the development of character among special populations. Through the present study, I sought to explore the influence of outdoor experience on a group of young adults living with Type 1 diabetes. There were several limitations to this study surrounding research bias and participant reporting, which were discussed in greater detail in Chapter Three. Additionally, although the incidence of Type 1 diabetes is increasing by approximately 3% each year (National Institute of Health, 2009), the sample population used in this study represented only a small portion of young adults with Type 1 diabetes. The qualitative nature of this study dictated that the sample population used would not necessarily be representative of the general population of young adults with Type 1 diabetes because of the small sample size and their previous interest in outdoor activity. Although this was not necessarily a limitation, it is important to note. The individuals recruited for this study were oriented toward outdoor and physical activity as demonstrated through their interest in and participation in Connected in Motion's outdoor experience focused Winter Slipstream weekends.

Definitions

As previously mentioned, the most common forms of diabetes are: Type 1, often distinguished by its autoimmune nature (Franoir, 1997); and Type 2, often distinguished by the onset of insulin resistance (Canadian Diabetes Association, 2009). The focus of this study was on individuals Type 1 diabetes; however, to avoid confusion, this type of diabetes was distinguished from Type 2 diabetes below. Other terms important to my research were also defined below, including: A1C test, young adult, outdoor experience, character, self-efficacy and autonomy.

Type 1 Diabetes

Type 1 diabetes, formerly referred to as diabetes mellitus, insulin-dependent diabetes and juvenile diabetes, is an autoimmune condition that occurs when the body's immune system attacks the pancreas and destroys its beta cells, which normally produce insulin (Balfe & Jackson, 2007; Juvenile Diabetes Research Foundation, 2009). Without insulin, the human body cannot transport glucose into its cells, which causes a dangerous buildup of glucose in the blood (Juvenile Diabetes Research Foundation, 2009). This buildup of glucose leads to various short term and long term challenges, which are further discussed in Chapter Two.

Type 1 diabetes is most commonly diagnosed in children, and the incidence of diagnosis before the age of five is increasing steadily (Schilling, Grey & Knafl, 2006). For this reason, the majority of published research focuses on treatment and care for Type 1 diabetes among children. The disease, however, is a lifelong condition and its challenges do not stop requiring care after childhood. Type 1 diabetes is discussed further in Chapter Two.

Type 2 Diabetes

Type 2 diabetes differs from Type 1 diabetes by its etiology and its treatment; however, through my own experience, I had witnessed that the general public does not recognize the difference between the two forms of the disease. One of the reasons for the confusion between Type 1 and Type 2 diabetes is the high prevalence of Type 2 diabetes in comparison to Type 1 diabetes (National Institute of Health, 2008). The National Institute of Health (2008) estimates that between 90 and 95% of all diagnosed cases of diabetes are Type 2.

The onset of Type 2 diabetes is associated primarily with genetics; however, its onset is often also influenced by age, obesity, physical inactivity, impaired glucose metabolism and race/ethnicity (Astrup & Finer, 2000; National Institute of Health, 2008). Similar to Type 1 diabetes, Type 2 diabetes leads to serious complications including cardiovascular disease, decreased life expectancy and disability (Astrup & Finer, 2000); however, Type 2 diabetes can often be managed through diet, exercise and medication including both oral pills and injected insulin (National Institute of Health, 2008). For the purposes of my research, the focus was on Type 1 diabetes only; however, by outlining the differences between the two main forms of diabetes, I hoped to avoid reader confusion as well as to allow the reader a deeper understanding of Type 1 diabetes.

Other Types of Diabetes

It is important to note that other types of diabetes do exist, including, but not limited to Latent Autoimmune Diabetes in Adults (LADA), Gestational diabetes, Surgically-Induced diabetes, monogenic diabetes, and diabetes isipidus. Because these

other types of diabetes prevail to a much lesser degree than Type 1 and Type 2 diabetes, they are not discussed in detail. In brief, LADA a term first introduced in 1994, refers to a type of diabetes in adults that displays the symptoms of phenotypic Type 2 diabetes, but resembles, on an autoimmune level, Type 1 diabetes (Brooks-Worrell & Palmer, 2011). Gestational diabetes occurs in approximately two to five per cent of pregnancies and results in elevated blood glucose levels during the gestational period (Juvenile Diabetes Research Foundation, 2011). Gestational diabetes is often reversed after childbirth but leaves women at higher risk of developing Type 1 or 2 diabetes later in life (Juvenile Diabetes Research Foundation, 2011). Surgically-Induced diabetes occurs after surgery involving damage or removal of the pancreas (Brendle, 2010). Surgically-Induced diabetes is most commonly associated with pancreatectomy (Brendle, 2010). Monogenic diabetes is a rare form of diabetes caused by a single gene mutation and occurring in one to two percent of all young children misdiagnosed with Type 1 diabetes (Juvenile Diabetes Research Foundation, 2011). Children diagnosed with monogenic diabetes can often be weaned off insulin and live healthily on oral medication (Juvenile Diabetes Research Foundation, 2011). Finally, patients with diabetes insipidus exhibit all of the symptoms of an untreated person with Type 1 diabetes; however, these individuals have no pancreatic/insulin-producing problems (Knoers, 2000). Diabetes insipidus is associated with kidney dysfunction and is caused by head injury, tumor growth, surgery or infection (Knoers, 2000).

A1C Test

The A1C test, which was formerly called the HbA1C test, is a blood test measuring average blood glucose levels over a 3-month period (Canadian Diabetes

Association, 2009). The test is completed through venous blood sampling (Sicard & Taylor, 2005). It is recommended that individuals with Type 1 diabetes have the test done once every 3 months (Canadian Diabetes Association, 2009). The average A1C blood test result for an individual without diabetes is approximately 5% (American Diabetes Association, 2009) and it is recommended that individuals with Type 1 diabetes maintain an A1C result of less than 7%. Although several other tests associated with diabetes exist, A1C testing was the only one relevant to the current study and as such was the only one defined.

Young Adult

For the purposes of this research, a young adult was defined as an individual between 18 and 30 years of age. Erikson (1963) first described young adults as being between the ages of 18 and 30 in his 1963 publication *Childhood and Society*. A number of empirical studies adopted this definition of young adult, using it to describe this population (Dunning, 1993; Scott, Vallis, Charette, Murray & Latta, 2002).

Several characteristics exist making young adults with Type 1 diabetes unique from adolescents, children or the elderly. Young adulthood has been described as the time when complications associated with Type 1 diabetes begin to manifest (Anderson & Wolpert, 2004). Additionally, young adulthood is a time of increasing independence often associated with living separate from family (Anderson & Wolpert, 2004) and, in terms of diabetes management, transferring from pediatric to adult diabetes clinics (Scott et al., 2002). The unique characteristics and challenges of young adulthood are discussed further in Chapter Two.

Outdoor Experience

For the purposes of this study, outdoor experience was defined as activity taking place in natural areas such as forests or water bodies with recreational or leisure purposes (Johnson & Beale, 2002). Throughout the literature, these experiences may include, but are not limited to camping, backpacking, hiking, biking, boating, snowshoeing or cross-country skiing (Warnick, 2004). The outdoor experiences focused on throughout this study included those taking place at Connected in Motion's Winter Slipstream weekends. These activities included cross-country skiing, snowshoeing, ice skating, winter hiking, ice sport and tobogganing.

Character

Character is a series of traits possessed by individuals and forms the foundation of personality, which is a concept in itself (Park & Peterson, 2006). Character is both multifaceted (Walker & Pitts, 1998) and dynamic (Kessler, Ibrahim & Kahn, 1986). Although there are an infinite number of possible traits that might contribute to character, the most dominant traits presented throughout the literature relating to diabetes management and outdoor experience, and those that were focused on for the purpose of this research were self-efficacy and autonomy. The dynamic aspect of character comes from the idea that each trait is constantly evolving and changing with experience.

Self-efficacy

Self-efficacy is a trait that is closely related to the concept of self-confidence, as demonstrated as the interchanging use of the terms throughout the literature (Mann, Ponniemann, Leventhal & Halm, 2009; Ott, Greening, Palardy, Holderby & DeBell,

2000). In order to understand self-efficacy, the concept of self-confidence should first be explained. The word confident comes from the Latin word *confido*, which means to trust, to believe or to rely upon (Blanchard & Schriber, 1999). To be self-confident, therefore, is to have trust in the skills you possess and to believe that you can use those skills effectively for whatever purposes they may serve (Bandura, 1994). Confidence differs from efficacy in that it is often generalized to pertain to a broad range of trusted skills, whereas efficacy relates to the trust in a very specific outcome or result (Bandura, 1997). For the purposes of this study, the focus was on self-efficacy as it pertains specifically to diabetes management. In order to examine self-efficacy among my participants, I looked for evidence of self-efficacy in specific diabetes management tasks as demonstrated through interview responses. Grossman, Brink and Hauser (1987) outline the tasks important to promote diabetes management as insulin administration, blood glucose monitoring, dietary prescription and exercise. Grossman et al. (1987) created a self-efficacy scale, using these diabetes self-management tasks to measure self-efficacy. It is important to note that although several participants used the term confidence to refer to various diabetes management skills, I understood this to mean, when pertaining to a specific skill, self-efficacy.

Although not included in Grossman et al.'s (1987) self-efficacy scale, it is also important to note the influence of stress in diabetes management and diabetes self-efficacy. Briefly, life stresses can trigger the release of various hormones into the blood stream, many of which significantly influence blood glucose levels in individuals with Type 1 diabetes (Surwit, Schneider & Feinglos, 1992). In light of this additional

management issue, it should be noted that diabetes self-efficacy additionally encompasses one's ability to manage stress.

Autonomy

Autonomy is often used synonymously with the word independence (Wurdinger & Paxton, 2003) and refers to the amount of freedom and discretion an individual has in carrying out tasks (Hackman, 1983). Although autonomy becomes increasingly important during an individual's adolescent years (Rosen, Cheever & Carrier, 2008), autonomy is also very important during young adulthood as this is a time of true independence often characterized by living alone, attending school or working, and pursuing relationships (Lamborn & Groh, 2009). Bekker and Van Assen (2006) report that autonomy can be measured by analyzing individuals' self-awareness, sensitivity to others and capacity to manage new situations. Throughout my interviews, I questioned participants in order to investigate the presence of self-awareness, sensitivity to others and capacity to manage new situations, with a specific focus on both how outdoor experience had influenced these attributes and how these attributes had affected diabetes management. Participants almost exclusively used the term independence when asked about autonomy. I believe that this occurred because independence is a more widely recognized term (Wurdinger & Paxton, 2003).

Organization of the Document

Chapter Two includes a literature review focused on the summary of empirical evidence related to Type 1 diabetes, character development and outdoor experience. First, the theoretical framework that guided this research is presented. Following this, the challenges facing young adults with Type 1 diabetes are discussed. The

investigation focuses around the various physical, social and emotional challenges facing this unique population. Next, an overview of self-efficacy and autonomy is presented—two character traits that are studied in detail with regards to the present research study. The benefits of developing self-efficacy and autonomy, specifically for young adults with Type 1 diabetes, are outlined with relation to the challenges these individuals face. Finally, relevant research regarding the role that outdoor experience played in both diabetes management and in character development, specifically self-efficacy and autonomy, is presented.

The methodology for this study is described in Chapter Three. This chapter outlines the research methodology used and focuses specifically on phenomenological research, followed by a detailed discussion of participant selection, data collection through semi-structured interviews and artifact-elicitation interviews and data analysis. Chapter Three concludes with an overview of the study's limitations and an outline of the methodology followed throughout this study.

Chapter Four presents the results of this study including the six primary themes emerged as a result of the data analysis process. The participant reports that led to these themes are reported in detail with relation to the lived experiences of the participants involved in my study.

Finally, a synthesis of the findings from this study and its integration into the relevant body of literature is presented in Chapter Five. This is followed by my recommendations about implications for practice, for theory and for future study.

CHAPTER TWO: LITERATURE REVIEW

This chapter presents a review of the relevant literature related to the study's purpose and central research queries. This literature review begins with a discussion of young adults living with Type 1 diabetes in North America, and the current support and education programs that exist to help manage the disease. More specifically, the relevant literature relating to diabetes and the benefits that may be gained through outdoor experience is presented. The unique challenges facing young adults with Type 1 diabetes is first reviewed, specifically focusing on physical (Acharya et al., 2008; Bryden, et al., 2001; Juvenile Diabetes Research Foundation, 2009; Saunders, Wallymahmed & MacFarlane, 2004), social (Buckloh et al., 2008; Thorpe, Lewis & Sterba, 2008), and emotional (Blanz, Rensch-Riemann, Fritz-Sigmund & Schmidt, 1993; Bryden et al., 2001; Hislop, Fegan, Schlaeppli, Duck & Yeap, 2007) challenges. Following this review is a discussion of the benefits of self-efficacy and autonomy development, and how these character traits may help young adults with Type 1 diabetes deal with the various challenges they face. The review concludes with a summary of the literature relating to the development of character through outdoor experience.

Theoretical Framework

In order to provide a greater understanding of the theoretical framework that guides the present study, an outline of Bandura's (1978) Social Cognitive Theory is outlined below. The theory is presented with relation to predominant environmental determinist theory, personal determinist theory and interactionist theory. Focus is given to the construct of reciprocal determinism, relating this construct to the present study.

In order to provide a solid base for understanding the present study, it is first important to outline the theoretical framework that guided the present study. The following presents Bandura's Social Cognitive Theory, irrespective of the present study, in order to lay the framework and to provide the information necessary for a full understanding of the underpinnings of my own research. Bandura's Social Cognitive Theory was developed in 1978 as an extension of his (1977) Social Learning Theory. The Social Cognitive Theory was developed in response to suggestions that human behaviour is influenced by unidirectional causal factors (Bandura, 1978). Unidirectional causal factors of human behaviours include environmental and personal factors, which influence behaviour and were labeled as unidirectional as they were thought to independently influence behaviour, without the resulting behaviour influencing those environmental and personal factors in return.

Several theories were developed prior to Bandura's Social Cognitive Theory in attempt to explain behaviour. Environmental determinists, such as Skinner (1971) report that behaviour is determined by situational factors. The personal determinists assert something a bit different - that behaviour is determined predominantly by personal factors including "instincts, drives, traits and other motivational factors" (Bandura, 1978, p. 344). Prior to the development of the Social Cognitive Theory, Bandura used personal determinism to explain human behaviour (Bandura, 1978). In addition to both environmental determinists and personal determinists, interactionists state that behaviour is determined by a combination of both environmental and personal factors (Bandura, 1978).

With the development of the Social Cognitive Theory, Bandura poses that behaviour is not only determined by both environmental and personal factors, but that these factors are, in turn, also determined by behaviour (Bandura 1978). A similar reciprocal relationship is

demonstrated throughout the present study in Chapters Four and Five. As depicted in Figure 1, Bandura's Social Cognitive Theory (1978) asserts that a reciprocal relationship exists between human behaviour, environmental and personal factors. Bandura explains, "the term 'determinism' is used here to signify the production of effects by events, rather than in the doctrinal sense that actions are completely determined by a prior sequence of causes, independent of the individual" (Bandura, 1978, p. 345). According to Bandura (1978), "reciprocal determinism is proposed as a basic analytic principal of analyzing psychosocial phenomena at the level of intrapersonal development, interpersonal transactions and interactive functioning of organizational and social systems" (p. 344).

Bandura (1978) explains, "it is largely through their actions that people produce the environmental conditions that affect their behaviour in a reciprocal fashion" (p. 345) thus demonstrating the effect that behaviour may have on the environment, which, when paired with the environmental determinist belief that environmental factors determine behaviour, provides a reciprocal relationship between the two factors. Bandura (1978) goes on to explain the reciprocal relationship between personal factors, behaviour and environment as is presented below.

Bandura believes that people's efficacy and outcome expectations influence how they behave, and the environmental effects created by their actions in turn alter their expectations.

People activate different environmental reactions, apart from their behaviour, by their physical characteristics (e.g., size, physiognomy, race, sex, attractiveness) and socially conferred attributes, roles and status. The differential social treatment affects recipients' self-conceptions and actions in the ways that either maintain or

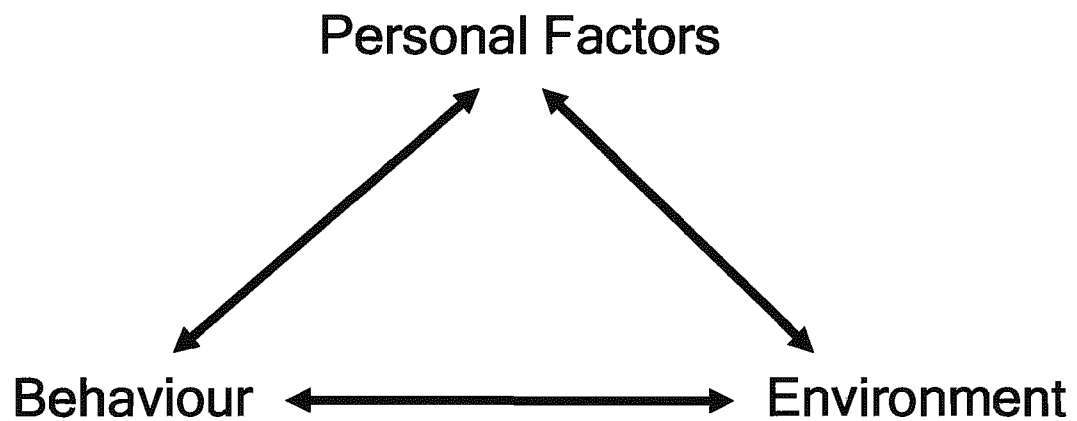


Figure 1. A schematic representation of Bandura's reciprocal determination concept. Behaviour reciprocally influences environment and personal factors. Environment reciprocally influences personal factors and behaviour. Personal factors reciprocally influence environment and behaviour (Bandura, 1978).

alter the environmental biases. (Bandura, 1978, p. 346)

The Social Cognitive Theory establishes a foundation for not only understanding, but also for predicting and changing human behaviour (Bandura, 1986). Based on the constructs of this theory, Bandura (1986) posits that an individual's behaviour can be predicted and changed through the manipulation of that individual's environment as well as personal factors. This present study seeks to understand how outdoor experience influences the development of character among a group of young adults living with Type 1 diabetes, as well as to evaluate how groups such as Connected in Motion may provide these experiences. The reciprocal determinism constructs of the Social Cognitive Theory (Bandura, 1986) are used to suggest that a combination of environmental factors (through the outdoor pursuits presented in the present study), personal factors (influenced through group dynamics and identified through discussion of character development) and overall behaviour of participants are all reciprocally related.

What is Diabetes?

From personal experience, I have come to understand that confusion exists with regards to the differences between Type 1 and Type 2 diabetes. In order to provide the reader with an understanding of the relationship between character development and Type 1 diabetes, I believe that it is important to provide an outline of the nature of Type 1 diabetes and how it affects the lives of young adults throughout North America, as well as how Type 1 diabetes differs from Type 2 diabetes. Type 1 and Type 2 diabetes are defined below.

As defined in Chapter One, Type 1 diabetes is an autoimmune condition that occurs when the body's immune system attacks the pancreas and destroys its beta cells, which normally produce insulin, essentially causing dangerous build ups of glucose in the blood

(Balfe & Jackson, 2007; Juvenile Diabetes Research Foundation, 2009). This can lead to such complications as dysfunction and failure of the heart, nerves, kidneys and eyes (Feltbower et al., 2008; Jimenez, 2007; Montez & Karner, 2005; Thorpe et al., 2008).

Throughout the Type 1 diabetes literature, dysfunction and failure of these vital organs are referred to as long-term complications. These complications are discussed in detail below with reference to the physical challenges of Type 1 diabetes. Because of the potential for long-term complications, Type 1 diabetes has become the sixth leading cause of death from disease in the United States (Montez & Karner, 2005). These long-term complications of Type 1 diabetes can be devastating, but they are not the only health challenges people with Type 1 diabetes faces.

The disease can also lead to other serious health effects, including hypoglycemia. Hypoglycemia is referred to as a short-term complication of Type 1 diabetes and poses a serious challenge for all individuals living with the disease (Balfe, 2009; Balfe & Jackson, 2007). It occurs when not enough glucose is present in the blood and can lead to various side effects including sweating, tremors, nausea, blurred vision, irritability, weakness, dizziness, unconsciousness and seizures (Balfe, 2009; Balfe & Jackson, 2007).

Hypoglycemia, although referred to as a short-term and immediate complication related to Type 1 diabetes, can also have serious long-term effects, which are outlined further in subsequent sections. Although Type 1 diabetes threatens an individual's physical wellbeing, I have come to understand that it also affects an individual's social and emotional wellbeing. These are investigated further.

There is no cure for Type 1 diabetes; however, several forms of treatment exist that aim to allow individuals with Type 1 diabetes to live full and healthy lives. These include

multiple daily injections (MDI) (Retnakaran et al., 2004) and continuous subcutaneous insulin infusion (CSII) (Peyrot & Rubin, 2007; Pickup, Mattock & Kerry, 2002; Retnakaran et al., 2004), most commonly referred to as insulin pump therapy. Both of these treatments have various strengths and limitations and the choice to use one type over the other comes with careful consideration from the individual with Type 1 diabetes and his or her diabetes team. Although these forms of treatment do not cure diabetes, they do allow a decrease in the complications associated with Type 1 diabetes later in life.

Type 1 diabetes is most commonly diagnosed in children, and the incidence of diagnosis before the age of five is increasing steadily (Schilling et al., 2006). For this reason, the majority of published research focuses on treatment and care for Type 1 diabetes among children. The disease, however, is a lifelong condition and its challenges do not stop after childhood. Although a small amount of literature focuses on adolescents as a population, there is very little research focusing on young adults. In attempt to fill this research gap, this study investigates the unique challenges faced by young adults with Type 1 diabetes and examines alternative forms of diabetes education for these individuals. The following represents an overview of the challenges of living with Type 1 diabetes, as outlined above.

The Challenges Faced by Young Adults with Type 1 Diabetes

As mentioned previously, there is no cure for Type 1 diabetes. It is something that affects individuals living with the disease at all stages of life; however, through a review of the current diabetes literature, I realized that very little exists regarding the challenges faced by young adults living with Type 1 diabetes. Through an investigation of this somewhat limited research, several major themes emerged. Young adults with Type 1 diabetes face

physical (Acharya et al., 2008; Bryden et al., 2001; Juvenile Diabetes Research Foundation, 2009; Saunders et al., 2004), social (Buckloh et al., 2008; Thorpe et al., 2008) and emotional (Blanz et al., 1993; Bryden et al., 2001; Hislop et al., 2007) challenges. These are discussed in order to establish the solid foundation of knowledge that is required to demonstrate the many ways that character development might be used to reduce the challenges and enhance the lives of young adults with Type 1 diabetes.

Physical Challenges

One cannot discuss diabetes without considering the numerous physical challenges that are associated with the disease. The major physical challenges associated with Type 1 diabetes are grouped into three main categories—glycemic control (Bruttomesso et al., 2007; Gerstl et al., 2008; Juvenile Diabetes Research Foundation, 2009; Retnakaran et al., 2004), short- and long-term complications (American Diabetes Association, 2009; Balfe, 2009) and body management (Acharya et al., 2008; Centre for Disease Control and Prevention, 2009; National Institute of Health, 2009). Although each of these physical challenges also may lead to further social and emotional challenges (Blanz et al., 1993; Bryden et al., 2001; Buckloh et al., 2008; Hislop et al., 2007; Thorpe et al., 2008), they pose the most immediate risk to health and wellbeing. These challenges are also the ones that are of interest to the greatest academic population and as such, a significant amount of research was presented with regards to each challenge. This research is reviewed further.

Glycemic control. Eating well is necessary for maintaining a healthy lifestyle and is a choice that is made by many people throughout North America (Shepherd et al., 2006). Healthy eating has been described as choosing fruits and vegetables instead of cakes and candies or choosing water or milk instead of pop or juices (Health Canada, 2009). For an

individual with Type 1 diabetes, however, deciding to eat healthy is less of a choice and more of a requirement (Daneman, 2006). Instead of simply opting for the healthier snack, people with diabetes are further encouraged by diabetes education teams to meticulously count carbohydrates and consider the glycemic index of each food they eat (Bishop et al., 2009). According to Bishop et al. (2009), individuals with Type 1 diabetes are encouraged to consider each of these values, test blood glucose levels and calculate insulin ratios, before every meal and snack consumed. Each of these steps is necessary in achieving optimal glycemic control, often measured using a three-month glucose trend test (i.e., an A1C test), the most important precaution in ensuring limited complications later in life (Daneman, 2006).

As mentioned previously, people with Type 1 diabetes cannot produce insulin, an important hormone in regulating glucose levels in the blood (Balfe & Jackson, 2007; Juvenile Diabetes Research Foundation, 2009). By administering carefully planned doses of insulin, individuals with Type 1 diabetes can better manage glucose levels in the blood, which, in turn, optimizes body function (Daneman, 2006). This proves to be a considerable challenge for many individuals with Type 1 diabetes, but becomes considerably more difficult during young adulthood (Jacobson, Samson, Weinger & Ryan, 2002; Jones, Lawson, Daneman, Olmsted & Rodin, 2000; Kovacs, Goldston, Obrosky & Iyengar, 1992; Rydall, Rodin, Olmsted, Devenyi & Daneman, 1997). It is reported that glycemic control differs greatly between individuals and can be affected by age (Acharya et al., 2008; Balfe, 2009; Battelino, 2009; Bryden et al., 2001; Gerstl et al., 2008; Saunders et al., 2004), gender (Bruttomesso et al., 2007; Bryden et al., 2001; Gerstl et al., 2008) and type of insulin

therapy employed (Ashwell et al., 2006; Nimri et al., 2006; Pickup et al., 2002; Retnakaran et al., 2004; Sulli & Shashaj, 2006; Thorpe et al., 2008).

Although some individuals maintain high levels of glycemic control, it has been suggested that glycemic control is, in fact, age dependent. In general, glycemic control is shown to be poorest during adolescence (Acharya et al., 2008; Bryden et al., 2001; Gerstl et al., 2008). This poor control may be the result of hormonal changes occurring during adolescents as well as increasing levels of independence and experimentation during this stage of life (Acharya et al., 2008). Acerini, Cheetham and Edge (2000) looked at insulin sensitivity levels in individuals with Type 1 diabetes and found that individuals are least sensitive to insulin when hormone levels are high, particularly during adolescence. Interestingly, Gerstl et al. (2008) suggest that age plays a role in glycemic control only after an individual has been living with Type 1 diabetes for a minimum of two years.

Even with expected increases in glycemic control during young adulthood when adolescent hormones have subsided, there is still significant room for improvement of both glycemic control and overall health. Studies show that even though A1C levels decrease during young adulthood when compared to the average levels of adolescents, indicating greater levels of glycemic control, overall day-to-day control is not any tighter (Acharya et al., 2008; Balfe, 2009; Saunders et al., 2004). A recent study, however, by the Juvenile Diabetes Research Foundation found that A1C levels decreased markedly after the age of twenty-five (Battelino, 2009). Findings throughout the literature regarding glycemic control and patient age support the notion that there is very little attention given to the young adult population. I believe that it would be beneficial for researchers to investigate the reasons why control does not improve during young adulthood, when hormonal changes have

slowed. I believe that these findings would be interesting as hormonal changes are the most reported factor in causing poor glycemic control among adolescents.

Age is not the only influencing factor to consider when discussing glycemic control. It is worth mentioning that studies have shown women to have poorer glycemic control than men (Bryden et al., 2001; Gerstl et al., 2008). This becomes especially troubling when considering pregnancy and young women with Type 1 diabetes, which was discussed further in subsequent sections. A study completed by Schwab et al. (2006) found that women were found to have higher A1C values, as well as higher body mass indices than males, making them at greater risk for cardiovascular complications later in life.

Several different modes of treatment exist for Type 1 diabetes, each with its own strengths and limitations. CSII (Peyrot & Rubin, 2007; Pickup et al., 2002; Retnakaran et al., 2004) and MDI (Retnakaran et al., 2004) are both the most advanced and the most widely used types of therapy. The decision to use one form of therapy over another comes from careful consideration of lifestyle factors, finances and overall user preferences.

MDI therapy is a widely used form of therapy among young adults in North America (Retnakaran et al., 2004). With the development of 24-hour acting insulin, the therapy has provided its users with even tighter control than had previously been seen (Ashwell et al., 2006). It is a less costly form of therapy and requires the use of only insulin and syringes (Thorpe et al., 2008). The latest advancement in insulin therapy, however, is CSII technology.

CSII therapy involves the use of an insulin pump, which infuses insulin via a catheter placed under the skin and has been shown to provide users with many advantages over MDI therapy; however, it also has many limitations which are discussed further. Among the

advantages of CSII therapy is a higher level of glycemic control. Throughout many studies, young adults with Type 1 diabetes are shown to have greater glycemic control when using CSII therapy compared to MDI therapy (Nimri et al., 2006; Pickup et al., 2002; Retnakaran et al., 2004). CSII therapy is shown to require less insulin, produce less glucose variability and provide higher treatment satisfaction (Bruttomesso et al., 2007; Sulli & Shashaj, 2006).

Although there are many advantages to CSII therapy, as discussed previously, several challenges to the therapy also exist. The greatest challenge in using CSII therapy is cost. The cost of CSII therapy is significantly higher when compared to MDI therapy (Harris et al., 2007). CSII therapy costs, on average, \$512 more per year than MDI therapy (Harris et al., 2007). This cost only reflects the amount spent on insulin pump supplies, and neglects the cost of the pump itself, which, as of 2010, ranged between \$6000 and \$7000 (Diabetes Advocacy, 2011).

Although CSII therapy does provide better glycemic control for most individuals, it is not the right therapy for every person with Type 1 diabetes. The challenges of maintaining healthy glycemic control result from a variety of factors—age, gender and therapy type being just three of these. For a young adult living with Type 1 diabetes the challenge of living healthily can be a daily balancing act between lifestyle choices and diabetes management with glycemic control being the most important factor when considering long-term health (Daneman, 2006).

Complications. Until there is a cure for Type 1 diabetes, complications of the disease will be in the forefront of the minds of many individuals living with the disease. Diabetes is the seventh leading cause of death from disease in the Canada (Health Canada,

2005). Both the short-term and long-term complications of Type 1 diabetes are a significant challenge for young adults and are discussed further.

Seemingly simple daily decisions can carry the risk of causing short-term complications for young adults with Type 1 diabetes. Most often, these are related to glycemic control (Daneman, 2006). The main short-term complications that a person with Type 1 diabetes faces, regardless of age, are hypoglycemia (Balfe, 2009; Balfe & Jackson, 2007; Fanelli & Rossetti, 2006) and diabetic ketoacidosis (DKA; Lehmkuhl et al., 2009; Varma & Bourgeois, 2008). Both of these complications can occur as a result of poor glycemic control; however, even an individual with the most tightly managed diabetes is at risk for experiencing short-term complications regularly (Daneman, 2006). This may seem puzzling; however, one must consider the many factors that influence blood sugar levels. A stressful situation can cause an individual with Type 1 diabetes' blood sugar to spike (Daneman, 2006), whereas a simple miscalculation of carbohydrates in a food can cause a dangerous low (or alternatively, high) blood sugar reading (Bishop et al., 2009).

Throughout the history of diabetes management, much medical advancement has been made allowing individuals better management of short-term complications (Maffeo, 1997); however, no individual is exempt from the risk. As discussed previously, hypoglycemia occurs when not enough glucose is present in the blood, leading to various side effects including sweating, tremors, nausea, blurred vision, irritability, weakness and dizziness (Balfe, 2009; Balfe & Jackson, 2007; Fanelli & Rossetti, 2006). Imagine you are doing any regular day activity—driving to work, shopping for groceries, going out for a run—and are overcome with any one of these symptoms. Even scarier is that fact that many people with diabetes face a combination of these symptoms during any one hypoglycemic

event, and that many individuals may not even recognize the symptoms due to the altered hormonal responses in the brain that occur during an episode of hypoglycemia (Fanelli & Rossetti, 2006). This is a very real challenge for young adults with Type 1 diabetes.

Advancements in diabetes management, including the development of CSII and the continuous glucose monitor (CGM), have helped to decrease the incidence of hypoglycemia among individuals with Type 1 diabetes (Diabetes Control and Complications Trial Research Group, 1993), but no advancement has been able to eradicate the complication completely. Promisingly, with the advent of long acting insulin, on average, the incidences of overnight hypoglycemia have decreased significantly (Barnett, 2006). CSII users are even less likely to experience hypoglycemic events than are MDI patients (Fanelli & Rossetti, 2006; Hoogma et al., 2005; Nimri et al., 2006). Hypoglycemia is still, however, a real physical challenge that must be planned for on a daily basis by young adults with Type 1 diabetes.

Additionally, individuals with Type 1 diabetes face the risk of hospitalization and even death due to DKA (Varma & Bourgeois, 2008). DKA is a condition that can occur when ketones build up in the bloodstream as a result of too little insulin, and often, poor glycemic control (American Diabetes Association, 2009). Ketones are a poisonous acid created when the body burns fat instead of glucose to create energy (American Diabetes Association, 2009). DKA has a mortality rate of 1-2% in young adults (Varma & Bourgeois, 2008), and can lead to significant long-term decreases in cognitive abilities after only two episodes (Lehmkuhl et al., 2009). Although DKA is a very real concern for young adults with Type 1 diabetes, it can often be prevented and controlled for with proper diabetes management (Varma & Bourgeois, 2008). Studies have found that intense blood

glucose monitoring can prevent DKA (Varma & Bourgeois) and that CSII therapy decreases DKA prevalence even further (Jakisch et al., 2007).

Along with short-term complications, long-term complications can also be a particularly difficult challenge for young adults with Type 1 diabetes; however, I believe that, because the effects of these complications are not immediate, they tend to be ignored. Perhaps the risks of these complications are ignored because of the lack of immediate changes in health status. Long term complications associated with diabetes are particularly troublesome and become a great challenge during young adulthood.

In a recent study by Feltbower et al. (2008), mortality in young adults with Type 1 diabetes was investigated. It was found that of all reported deaths, more than half were directly related to Type 1 diabetes. This study puts into perspective the real physical challenges faced by young adults with Type 1 diabetes. Many of the long-term complications addressed through diabetes education during childhood and adolescence may actually begin to appear as early as young adulthood (Feltbower et al., 2008), making it is even more important that young adults maintain tight control over their diabetes—an added challenge during an already stressful stage of life. The most common long-term complications associated with diabetes include heart disease, stroke, renal failure (Feltbower et al., 2008), eye, kidney and nerve damage (Thorpe et al., 2008). Not only does Type 1 diabetes decrease life expectancy by up to fifteen years, but it is also the main cause of blindness, amputation and kidney failure each year in the United States (Montez & Karner, 2005). This challenge, combined with the additional stress related to short-term complications and glycemic control make the physical challenges of living as a young adult

with Type 1 diabetes troublesome; however, they are not the only physical challenges these individuals face.

Body management. It is not hard for me to recall the difficulties associated with body image that many adolescents and young adults face. The pressure to maintain the perfect body as depicted through popular media is a challenge for many individuals (Gallagher & Pecot-Herbert, 2007), including young adults with Type 1 diabetes. Body management is a challenge for a number of reasons associated with diabetes including elevated body mass indexes (Acharya et al., 2008) common among men and women with Type 1 diabetes; struggles with eating disorders (Hsu, Chen, Huang, Lin & Lin, 2009; Jones et al., 2000; Mathieu, 2008), such as diabulima, which will be discussed in detail subsequently, and many problems associated with pregnancy among women with Type 1 diabetes (Nelson & Lindsay, 2009; Nielson et al., 2008).

The body mass index (BMI) is a measurement used to classify individuals based on height and weight (Centre for Disease Control and Prevention, 2009). It is commonly used as an indicator for certain weight-related health problems (Centre for Disease Control and Prevention, 2009). Young adults with Type 1 diabetes have particular difficulty with regards to BMI management (Acharya et al., 2008). In a study by Acharya et al. (2008) young adults with Type 1 diabetes between the ages of 22 and 25 were found to have the highest BMI when compared with other age groups. Why might this be the case? Perhaps it is because of the inconsistency faced by many young adults when it comes to routine, healthy eating habits and exercise. Perhaps it is related to shift towards a more independent lifestyle that happens during young adulthood (Schilling et al., 2006). Or perhaps it is caused, in part, by the lack of programming and support for young adults throughout

diabetes clinics in North America (Scott, Vallis, Charette, Murray & Latta, 2002). These possible answers are just a few of many concerning body management among young adults with Type 1 diabetes.

When body management becomes too much of a challenge, many individuals begin to develop disordered eating habits. In fact, as many as one in five healthy women were reported to be suffering from an eating disorder in 2008 in the United States (National Institute of Health, 2009). Research shows that young people with Type 1 diabetes are more likely to develop eating disorders than those without diabetes (Hsu et al., 2009; Jones et al., 2000). Recently, a new eating disorder, described by some as diabulimia, has become prevalent among young adults with Type 1 diabetes. Diabulima has been defined as the deliberate injection of reduced amounts of insulin in order to force the body to produce ketones and therefore burn body fat instead of glucose to create energy (Mathieu, 2008). The dangers of ketones were discussed previously. The development of this dangerous disorder can be tied to the perceived pressure placed on many young adults to attain societal norms of thinness and as such, can be understood as both a physical and a social challenge associated with young adulthood and Type 1 diabetes.

A further body management challenge faced by young women with Type 1 diabetes is associated with pregnancy and disease management. Pregnancy can be an exciting, but stressful time for any individual, and the challenge increases significantly when paired with Type 1 diabetes (Chen et al., 2007). Without maintaining glycemic control, individuals with Type 1 diabetes risk endangering the health of the unborn fetuses. Unfortunately glycemic control becomes even more challenging during pregnancy due to constant physical changes requiring the altering of insulin doses as well as impaired recognition of hypoglycemic

symptoms (Nelson & Lindsay, 2009; Nielson et al., 2008). Along with the risks previously discussed with regards to both hypo- and hyperglycemia, hyperglycemia also can cause severe maturational delays in a developing embryo (Nelson & Lindsay, 2009). These risks create many physical challenges that young pregnant women with Type 1 diabetes must overcome.

Glycemic control, risk of short- and long-term complications and body management issues are three challenges faced by young adults with Type 1 diabetes on a daily basis; however, these individuals also face many additional social and emotional challenges. After considering the physical challenges alone, it may be difficult to comprehend how this unique population is able to overcome challenges and seemingly thrive with the condition. I believe that it is possible; however, before discussing what can be done to overcome the physical challenges of diabetes, the social and emotional challenges are first outlined.

Social Challenges

Social interactions are a part of most people's growth and development; however, several social challenges exist that are unique to the population of young adults living with Type 1 diabetes, including those related to family and friend interactions (La Greca et al., 1995; Pendley et al., 2002) and support from healthcare professionals (Franklin, Waller, Pagliari & Greene, 2006; Rosland et al., 2008). One of the greatest challenges for young adults with Type 1 diabetes is the change in social support offered to individuals over the age of 18 years (Pendley et al., 2002).

When a child is diagnosed with Type 1 diabetes, primary care is often the responsibility of the parent, working alongside a healthcare team (La Greca et al., 1995). During adolescence, a change often occurs in which some aspects of diabetes management

responsibility transfers from the parent to the adolescent with diabetes (La Greca et al., 1995). During young adulthood, diabetes management often shifts completely to the individual with Type 1 diabetes, resulting in little to no parental involvement in care (Rosland et al., 2008). Additionally, at 18 years of age, young adults are often transferred from pediatric diabetes clinics to adult care facilities. This transition period has been particularly troublesome for many young adults with Type 1 diabetes (Pacaud et al., 2007). Imagine the challenges you would face when you find that once you reach so-called adulthood, the encouragement and support you had once known had all but disappeared. Unfortunately, this is a challenge faced by many young adults with Type 1 diabetes throughout Canada as they move through this difficult stage of life. Challenges are especially evident in the ever-changing social lives of these individuals.

Friends and family. Ask any young adult to name the most important and influential people in her life and she is likely to mention her friends and family. During young adulthood, however, many individuals are living separate from their families and are often displaced from their closest friends (Pacaud et al., 2007), a result of the shifting lifestyle associated with young adulthood—one that includes relocation for school or work opportunities (Pacaud et al., 2007). With new friends come new challenges for a young adult with Type 1 diabetes. Balfe and Jackson (2007) reported that undergraduate university and college students with Type 1 diabetes rank “maintaining a normal appearance” (p. 780) as being of utmost importance—of even greater importance than diabetes management. These individuals also report being very concerned about their outer appearances (Balfe & Jackson, 2007). This concern is not unique among the population of young adults with Type 1 diabetes, but becomes more of a challenge when living with the disease also means

wearing an insulin pump 24 hours a day or carrying blood glucose testing supplies, syringes and insulin around at all times (Balfe & Jackson, 2007).

Several authors (Balfe, 2009; Balfe & Jackson, 2007) suggest that undergraduate students avoid telling new friends that they have diabetes as they feel they might risk being judged by their peers. In a recent study, Balfe (2009) found that some students with Type 1 diabetes believe that others may view them as spoiled, different or disabled if they disclose information about the disease. For young adults with Type 1 diabetes who feel this way, the concern becomes not only the social challenge of fitting in, but also the concern of physical danger. As mentioned previously, individuals with Type 1 diabetes are prone to short-term risks including hypoglycemia, which can lead to seizures triggered by hypoglycemia and even death if not treated immediately (Mellinger, 2003). A young adult with Type 1 diabetes who chooses not to inform those around him/her of the hazards associated with the disease risks being mistreated in the case of an emergency.

Another major social challenge comes from a decreasing amount of familial support during young adulthood (La Greca et al., 1995). Prior to young adulthood, many individuals with Type 1 diabetes find that their families, and more often their mothers, are quite involved in daily diabetes care and management (Buckloh et al., 2008; Thorpe et al., 2008). During this time, it has been reported that parents as well as adolescents with Type 1 diabetes experience significant anxiety with regards to diabetes complications (Buckloh et al., 2008). Based on this finding, one would expect that when an individual leaves home and is away from the social support often provided by parents, diabetes control would diminish. Interestingly, when Eaton, Williams and Bodansky (2001) questioned young adults who were living away from family about their level of diabetes control, most reported

that their control was optimal; however, actual tests of glycemic control showed that many individuals had dangerously poor abilities to manage their diabetes. The lack of familial support for young adults with Type 1 diabetes has been shown to decrease the level of control (Eaton et al., 2001). This is dangerous not only because it heightens the risk of long-term complications, but also because of the short-term consequences that result due to lack of control.

To further support the research related to the influence of family and friends and diabetes management, Rosland et al. (2008) found that high levels of family support for adults with Type 1 diabetes leads to increased glucose monitoring. Interestingly, Pendley et al. (2002) found that during adolescence, some individuals with Type 1 diabetes experience a shift in perception with regards to peer acceptance of their disease. Pendley et al. (2002) reports that adolescents felt more accepted and felt greater support from peers than did children. Unfortunately, no direct relationships between this shift in perception and glycemic control could be made (Penley et al., 2002).

Healthcare professionals. Through my experiences as an individual with Type 1 diabetes, I have come to accept that medical appointments are a part of life. Be it with an endocrinologist, nurse, dietician, general practitioner or the range of other staff that make up a diabetes team, young adults with Type 1 diabetes can expect to visit the hospital or clinic, on average, once every three months (Lane et al., 2007). Healthcare professionals become well known throughout a the life of a person with Type 1 diabetes, particularly through pediatric care; however, in Canada, when an individual turns eighteen, they are often no longer admitted to pediatric care and are instead transferred to an adult care clinic, one often riddled with elderly patients with, more often than not, Type 2 diabetes (Scott et al., 2002).

Saunders et al. (2004) found that even when young adults visit regularly with a physician, nurse and dietician, diabetes management is still a major challenge. Perhaps the reason for this resonates with the type of support provided during these visits. Interestingly, Thorpe et al. (2008) found that when a patient with Type 1 diabetes experiences direct persuasion from healthcare professionals to change their management behaviours, the individual often pretends to change behaviour when, in fact, no real behaviour change actually occurs. This suggests that perhaps it is the direct persuasion or authority presented by the healthcare professionals at diabetes clinics that poses the challenge to individuals' behaviour change. The social support provided by healthcare professionals could have a great influence on the lifestyle choices that an individual makes as well as a positive influence on glycemic control and diabetes management strategies (Rosland et al., 2008).

Several programs currently exist which aim to assist in the transition of patients with Type 1 diabetes from pediatric care to adult care (Franklin et al., 2006; Van Wallegghem, Macdonald & Dean, 2008). These programs might be the answer to tightening control and to minimizing the risk of the long-term complications of the disease (Franklin et al., 2006). One such program was developed in Manitoba, Canada and used frequent email and telephone contact with young adults visiting diabetes care centres to ensure that their unique needs were being met (Van Wallegghem et al., 2008). Through this program several areas for improvement among the traditional clinical settings were identified including eliminating barriers to accessing healthcare, use of a website for updates, drop-in centres, meetings and educational events (Van Wallegghem et al., 2008). One overarching theme that was present in Van Wallegghem et al.'s (2008) study was the need for social support by the healthcare team. Social support provided through the use of technology (website and email) and

through the introduction of peer interaction via drop-in centres, meetings and educational events (Van Wallegghem et al., 2008) was the most effective means of ensuring high levels of ongoing patient care. This new and innovative social support led to greater clinic attendance rates among the individuals involved when compared to individuals enrolled in a standard transition to adult care (Van Wallegghem et al., 2008). It would be of benefit to these methods of social support further and to implement them at more clinical centres throughout Canada.

Franklin et al. (2006) conducted a similar study in which healthcare professionals communicated with young adult patients via text messaging through a program called Sweet Talk. Messages were tailored to the specific needs and goals of each participant and were sent on a daily basis (Franklin et al., 2006). After the completion of the study, it was found that although the program did not have a significant affect on glycemic control it did greatly improve diabetes management plan adherence among participants, as well as causing an increase in diabetes management related self-efficacy (Franklin et al., 2006). These findings further support the idea that, perhaps, healthcare professionals are targeting the young adult population in inefficient ways. Further studies into programs such as Sweet Talk would yield interesting results and might result in the development of effective, age-specific diabetes management tools.

The changing social support experienced during the transition from adolescence to young adulthood is a serious challenge for the individuals with Type 1 diabetes and one that has been reported time and time again throughout North America (Pendley et al., 2002). Unfortunately, it is one of many challenges faced by young adults and one that is not easily remedied.

Emotional Challenges

Emotional disturbances can cause significant challenges for young adults without Type 1 diabetes and even greater challenges for those with the disease. It has been shown that young adults suffering from emotional disturbances have poorer social skills, lower academic achievements, limited post secondary participation and significant employment difficulties when compared to their peers (Armstrong, Dedrick & Greenbaum, 2003).

Emotional challenges come in many forms, and are common among populations of young adults with Type 1 diabetes (Anderson, Freedland, Clouse & Lustman, 2001; Blanz et al., 1993; Hislop et al., 2007). More specifically, it has been shown that many young adults living with Type 1 diabetes are also living with serious psychiatric disorders, specifically depression (Anderson et al., 2001; Blanz et al., 1993; Hislop et al., 2007) and emotional distress (Bryden et al., 2001; Buckloh et al., 2008; Kay, Davies, Gamsu & Jarman, 2009; Lerman-Garber et al., 2003; Ritholz et al., 2007; Skinner, Hampson & Fife-Schaw, 2002). These are investigated further.

Psychiatric disorders. Psychiatric disorders including sleeping disturbances, compulsions and depression have been shown to occur at a rate three times greater among individuals with Type 1 diabetes than among individuals without diabetes (Blanz et al., 1993). Of these disorders, depression is most often studied (de Groot, Anderson, Freedland, Clouse & Lustman, 2001; Egede, 2004; Lustman, Anderson & Freedland, 2000). It is important to consider how young adults with Type 1 diabetes are impacted by depression.

Depression is defined as a “treatable medical illness involving an imbalance of brain chemicals called neurotransmitters and neuropeptides” (Depression and Bipolar Support Alliance, 2009, para. 1) and affects as much as 9.5% of the American adult population

(Depression and Bipolar Support Alliance, 2009). Ask anyone who knows someone dealing with depression and they can most likely list the difficulties and challenges that come along with it, including sleeping problems, eating problems, feelings of sadness, grief, guilt and a loss of energy (Canadian Mental Health Association, 2009). Reports show that as many as 35.2% of young adults with Type 1 diabetes also suffer from depression (Hislop et al., 2007). This is a somewhat alarming statistic when one considers the challenges that emerge when depression and diabetes are combined. Hislop et al. (2007) found that increased severe cases of hypoglycemia are highly associated with depression among young adults with Type 1 diabetes and that depression often occurs soon after the transition is made from pediatric to adult care.

Depression is a serious issue for young adults with Type 1 diabetes. It has been found that rates of depression are increased among young adults with Type 1 diabetes because of increased stress associated with blood glucose monitoring, fear of hypoglycemia and pressure from healthcare professionals (Hislop et al., 2007). As mentioned previously, stress plays a role in blood glucose management. When an individual is stressed, hormones are released (Surwit et al., 1992). These hormones significantly influence blood glucose levels often causing intense spikes, which make glucose control difficult (Surwit et al., 1992), which may lead to further depression symptoms (Musselman, Betan, Larsen & Phillips, 2003).

Depression rates have also been found to be higher amongst women with Type 1 diabetes when compared with men (Anderson et al., 2001) and higher among insulin pump users than multiple daily injection patients (Hislop et al., 2007). Although these differences do exist, it can be concluded that depression is a challenge for many young adults living

with Type 1 diabetes and that there is a need for more research into the treatment options that would decrease the risk of depressive symptoms while optimizing diabetes control.

Emotional distress. Emotional support is important for any individual living with a life threatening disease, and has been reported by parents of youth with Type 1 diabetes as one of the biggest missing pieces in diabetes management programming for children (Buckloh et al., 2008). This void also exists in diabetes management programs for young adults and as a result, research suggests that young adulthood is the period of highest emotional distress when compared to other life stages (Bryden et al., 2001). Emotional distress can both stem from and lead to severe behavioural problems and therefore it is important that it is prevented through diabetes education and management programming (Bryden et al., 2001).

Similar to depression, emotional distress has been reported more often in women than in men (Kay et al., 2009). Some women with Type 1 diabetes report an emotional impact associated with feelings of being restricted during daily activities (Kay et al., 2009). Kay et al. (2009) report that some women with Type 1 diabetes do not feel that peers who do not have diabetes understand them and as a result, these women experience significant emotional distress (Kay et al., 2009). It is suggested that the largest factors contributing to emotional distress are fear of future complications, poor diabetes knowledge and poor glycemic control (Lerman-Garber et al., 2003).

Individuals using CSII therapy suffer from more emotional distress than those using MDI therapy (Ritholz et al., 2007). Ritholz et al. (2007) found that young adults who take on passive roles in their own diabetes management, that is, expecting that the insulin pump

will be a miracle tool requiring no additional work for diabetes care, were more emotionally distressed than those individuals who took on a more active role in their management.

Skinner et al. (2002) related certain personal characteristics such as emotional stability and conscientiousness to overall level of health and found that the less emotionally distressed an individual is, the more likely that individual will be in good health. This was found to be especially true in young adults with Type 1 diabetes (Skinner et al., 2002).

These findings, associating emotional distress with diabetes, suggest that more care needs to be taken to ensure emotional stability among young adults with Type 1 diabetes, but how can this be achieved?

Several similar questions posed thus far related to overcoming the many challenges associated with Type 1 diabetes among young adults. One interesting and novel way to understand how these various physical, social and emotional challenges can be overcome was to review the literature relating to the use of character development strategies in diabetes management. The following section reviews the relevant literature in attempt to outline the ways in which the development of autonomy and self-efficacy aids in the battle against the various challenges facing young adults with Type 1 diabetes.

The Role of Character Development in Diabetes Management

In order to understand the role that character development plays in Type 1 diabetes management, the concept of character is defined. Berkowitz and Bier (2004) define character as “the complex set of psychological characteristics that enable an individual to act as a moral agent.” (p. 73). An idea based within the domain of personality psychology, or more specifically, trait theory, Peterson and Seligman (2004) describe character traits as having “individual differences that are stable and general but also shaped by the individual’s

setting and thus capable of change” (p. 10). Among the many listed character traits throughout the literature, two have been discussed specifically with regards to diabetes management. For the purposes of this research, the traits of self-efficacy (Groessl & Cronan, 2000; Hill-Briggs, 2003; Paterson & Britten, 2003) and autonomy (Scott et al., 2002; Williams, McGregor, Zeldman, Freedman & Deci, 2004) are the focus. It is important to consider how self-efficacy and autonomy might assist young adults living with Type 1 diabetes in the management of their disease. This question is investigated through the following review of the literature relating character development to diabetes management.

All too often, life with diabetes has been portrayed as challenging, with many obstacles that must be overcome in order to live healthily. I find this somewhat troubling, however, because this was not the way in which I, or many others, view the disease. I was interested to discover that a substantial amount of literature exists relating to the development of certain character traits, specifically self-efficacy (Groessl & Cronan, 2000; Hill-Briggs, 2003; Paterson & Britten, 2003) and autonomy (Scott et al., 2002; Williams et al., 2004) to overcoming the challenges associated with Type 1 diabetes. The following section outlines the main findings related to this body of knowledge, beginning with an overview of self-efficacy and the methods suggested for increasing this trait and followed by an overview of autonomy and its relations to Type 1 diabetes management.

Self Efficacy

Self-efficacy refers to an individual's trust in oneself to achieve a very specific outcome or result (Bandura, 1997). Self-efficacy may be important when considering diabetes management (Hill-Briggs, 2003), but in what ways was it important and how could it play a role in overcoming the daily challenges faced by young adults with Type 1

diabetes? There are many ways that self-efficacy can reduce the challenges faced by young adults with Type 1 diabetes. A relationship exists between problem solving self-efficacy and diabetes management (Hill-Briggs, 2003). Hill-Briggs (2003) reported that increased confidence in one's problem solving skills can lead to increased glycemic control among individuals with Type 1 diabetes. This is an important consideration because, as mentioned previously, tight glycemic control can reduce both short-term and long-term diabetes complications in young adults (Balfe, 2009). Increased self-efficacy has also been related to increases in overall health status among individuals suffering from chronic disease (Groessl & Cronan, 2000) and in the case of Type 1 diabetes, increased health status comes as a result of improved glycemic control (Hill-Briggs, 2003).

There may be several reasons why increased self-efficacy leads to increased health status among chronically ill individuals. Gilman, Huebner and Furlong (2009) describe a person with high self-efficacy as being one that would "approach difficult tasks as challenges to be mastered rather than as threats to be avoided" (p. 152). Bandura (1994) goes further to explain that these individuals will set higher, more challenging goals for themselves and will be more committed to achieving those goals. When applying Bandura's ideas to diabetes management, it can be assumed that individuals with Type 1 diabetes who have high self-efficacy may set goals relating to having tight glycemic control and remain committed to this goal, thus increasing health status.

A second reason why high levels of self-efficacy lead to higher health status relates to Bandura's (1994) idea that individuals with high self-efficacy will attribute failure to insufficient effort and ultimately try even harder to achieve goals. When considering

diabetes management, this might mean attributing a period of poor glycemic control to a lack of effort, something that can be changed immediately through personal perseverance.

It is often believed that certain character traits are static and unchangeable, but self-efficacy is not a static trait as it can be altered through experience—in both positive and negative directions (Bandura, 1994). Although increases in self-efficacy have been shown to influence the behaviour of individuals with diabetes positively through tighter glycemic control (Hill-Briggs, 2003), positive lifestyle changes (Paterson & Britten, 2003) and lower levels of anxiety and distress (Shelley & Pakenham, 2004), there is evidence to suggest that decreases in self-efficacy might have damaging effects on the health of young adults with Type 1 diabetes (Aalto, Uutela & Aro, 2000).

Aalto et al. (2000) found that individuals living with chronic disease had greater feelings of distress and experienced long-term complications when they presented with suboptimal levels of self-efficacy (Aalto et al., 2000). Additionally, a lack of self-confidence has been associated with a lack of adherence to diabetes management plans, which will ultimately lead to poor glycemic control and long-term complications (Mann et al., 2009). Clearly, low levels of self-efficacy have detrimental effects when it comes to diabetes management and overall health. To add to this challenge, it has been shown that some individuals suffering from chronic illness have less self-confidence overall than the general population (Miauton, Narring & Michaud, 2003) and that self-efficacy actually declines with age (Groessl & Cronan, 2000).

It is apparent that increasing self-efficacy among young adults with Type 1 diabetes is important, but consideration should be given to how this might be accomplished. Four methods of increasing and maintaining self-efficacy have been discussed throughout the

literature including mastery experiences (Bandura, 1982; Dahlbeck & Lightsey, 2008), vicarious experiences through role modeling (Bandura, 1977; Lorig et al., 1999), verbal persuasion (Davis, Carrieri-Kohlman, Janson, Gold & Stulbarg, 2006) and physiological/affective states (Bandura, 1994).

Mastery experiences. As noted, mastery experience is one of four methods of increasing self-efficacy, as described by Bandura (1982). Mastery experience is defined as the practice of the desired task (Bandura, 1982) and may be applicable in several realms of diabetes management, as it applies to other chronic illnesses (Dahlbeck & Lightsey, 2008). Applications include mastery experiences relating to tight glycemic control (Ott et al., 2000) and mastery experiences related to self-management practices (Zinken, Cradock & Skinner, 2008), as described above.

Mastery experience is said to be the most effective source of self-efficacy, as outlined by Bandura (1971). Because mastery experiences are such effective ways of increasing self-efficacy (Ott et al., 2000) and because self-efficacy is so important in diabetes management, I believe that promoting mastery experiences is an important part of any diabetes management plan.

Role modeling. As might be assumed, when positive role models influence individuals, self-efficacy is changed in a positive direction. Lorig et al. (1999) conducted a study in which chronically ill individuals underwent self-management training. In an attempt to demonstrate the relationship between positive role models and positive behaviour change as outlined by Bandura's (1977) self-efficacy theory, Lorig et al. (1999) used chronically ill facilitators in the implementation of their programming. It was found that the use of these positive role models contributed to an increase in self-efficacy and self-

management behaviour, ultimately leading to fewer hospital visits, increased minutes of exercise, and improved self-report measures, among other factors (Lorig et al., 1999). This method of using facilitators with a health condition similar to that of the patient was a model that I had seen used throughout many camping programs for children with Type 1 diabetes. This model suggests that individuals with Type 1 diabetes will benefit from positive role models who are also living with Type 1 diabetes through increased levels of self-efficacy.

Verbal Persuasion. Bandura (1971) asserts that verbal persuasion may be an effective method of increasing self-efficacy. Defined as "verbally convincing people that they have the capability to achieve their goals" (Davis et al., 2006, p. 61), verbal persuasion has been shown to have varied outcomes in terms of increasing self-efficacy. Mellor, Barclay, Bulger and Kath (2006) designed a study to test the hypothesis that an individual's self-efficacy is increased when someone who is viewed as having performance experience in that same task provides that individual with verbal persuasion. Results proposed that self-efficacy is increased through the use of verbal persuasion, especially in cases where the individual with performance experience and the individual performing the task are of the same gender (Mellor et al., 2006). Alternatively, Tschannen-Moran and Hoy (2007) found no differences when it came to gender and verbal persuasion as a predictor of self-efficacy. Yet, Tschannen-Moran and Hoy (2007) found that although verbal persuasion does increase self-efficacy, specifically among novice teachers, increases in self-efficacy were much greater as a result of mastery experiences.

There is a challenge, however, in using verbal persuasion to increase self-efficacy. In some cases, verbal persuasion may be used too often or inappropriately (Margolis & McCabe, 2006). Occasionally, verbal persuasion may also be used in situations where the

individual completing the task fails repeatedly (Margolis & McCabe, 2006). In cases like these, verbal persuasion may prove to be damaging to the self-efficacy of the individual. If similar instances of verbal persuasion occur in the future, the individual may be reluctant to even attempt the task at hand (Margolis & McCabe, 2006). Although verbal persuasion can be an effective tool for increasing self-efficacy, it must be used in an appropriate manner in order to remain effective.

Physiological/affective state. With regards to self-efficacy, physiological and affective states relate to emotional processes, particularly to emotional regulation (Bandura, 1994). These processes play a major role in the development of self-efficacy, as was outlined subsequently. One example of the role that physiological and affective states play in the development of self-efficacy relates to negative emotions and performance appraisal (Bandura, 1994). Individuals who exhibit negative emotions are more likely to feel poorly about performance and to have lower self-efficacy related to that performance (Bandura, 1994). Even more interesting is Bandura's finding that both physiological and affective states have a significant influence on self-efficacy among individuals concerned with health functioning, such as Type 1 diabetes, or with athletic performance when compared to individuals without chronic illness.

It has been shown that increased self-efficacy can positively influence the overcoming of challenges among a diabetic population, but what challenges, specifically, are most affected? As mentioned previously, glycemic control can be increased leading to both reduced short-term and long-term complications (Hill-Briggs, 2003) and reduced physical challenges facing young adults with Type 1 diabetes. Additionally, increases in self-efficacy may influence group dynamics and lead to increased social support from

friends and family (DiMatteo, 2004). Lorig et al. (1999) suggests that increased self-efficacy can positively influence the self-management behaviour of individuals with chronic disease, ultimately decreasing the need for support from healthcare professionals through the completion of a program based on Bandura's self-efficacy theory. There are still, however, many other challenges for a young adult with Type 1 diabetes to overcome, as outlined previously. The development of additional character traits can help to limit these challenges.

Autonomy

Autonomy development is an important factor for young adults with Type 1 diabetes in overcoming the physical and social challenges of the disease (Rasmussen, O'Connell, Dunning & Cox, 2007; Scott et al., 2002). Developing autonomy can promote a more balanced and healthy life for these individuals (Rasmussen et al., 2007; Scott et al., 2002). How can one trait provide these benefits? To answer that question, an overview of autonomy is presented below.

Several benefits of autonomy exist for young adults—benefits that become even greater to individuals living with Type 1 diabetes. By increasing autonomy, young adults with Type 1 diabetes can begin to overcome the social challenges they are facing while living with this chronic illness. As outlined previously, young adults with Type 1 diabetes often lack social support from friends, family members and healthcare workers. How, then, can becoming more autonomous and acting independently from these groups help one feel more supported?

One important aspect to consider when discussing autonomy is the idea that an autonomous person has high levels of initiative, self-directedness and skill mastery

(Williams et al., 2004). For individuals with Type 1 diabetes, these autonomous behaviours initiate less support requirements from family, friends and healthcare workers. Autonomous individuals with Type 1 diabetes report having better glycemic control when allowed to set their own goals, to have their own perspectives acknowledged, to review and make choices based on options and to have minimal pressure and control exerted on them by healthcare workers (Williams et al., 2004). This is not to imply that support is no longer needed from external sources, but perhaps asserts that the support needed is different for young autonomous adults. These individuals often view the healthcare system as less rigid and more flexible to fit to the changing needs of their lifestyle (Scott et al., 2002).

Autonomous behaviour has also been shown to help young adults with Type 1 diabetes overcome the physical challenges of living with the disease. Similar to the previous outcomes related to self-efficacy, autonomy has also been shown to be directly linked to improved glycemic control (Rasmussen et al., 2007; Scott et al., 2002) which then, in turn, can lead to decreased risk of both short-term and long-term complications.

Interestingly, a study completed by Wysocki et al. (2006) found that young adults with Type 1 diabetes, who were highly autonomous, had decreased glycemic control when following non-intensive treatment regimens. Based on my own experiences, I believe that abusing independence and taking advantage of a lack of parental and healthcare support during early years of adulthood may have caused this. Fortunately, those individuals who were deemed autonomous but followed an intensive care regimen, such as CSII or MDI had significantly less deterioration than a control group of non-autonomous individuals (Wysocki et al., 2006). This suggests that autonomy alone cannot relieve a young adult with Type 1 diabetes from all of the physical challenges of the disease and that active care must

be taken in order to achieve this goal. Autonomy is, however, a benefit when paired with other character traits. Research shows that the development of autonomy can promote the development of both self-efficacy (Williams et al., 2004) and health-related motivation (Williams et al., 2004).

The Development of Character through Outdoor Experience

I believe that no single character trait can provide the answer to overcoming all of the challenges associated with Type 1 diabetes, but self-efficacy and autonomy may help to alleviate some of the major challenges. But how these traits can be developed and at what cost? No solution is worthy of implementing if it requires an enormous change in lifestyle, time commitment or financial obligation, so what possibly could be done to promote the development of these traits in a practical and feasible way?

A Brief History of Outdoor Programming

The answer to this question lies right outside of our windows, literally. In 1861 the first organized outdoor experience within North America was documented as providing individuals with opportunities for personal growth (Davis-Berman & Berman, 1994). Over time, programs have been developed to meet specific and changing needs of various populations, as is outlined below. Many outdoor programs now focus on developing character traits and using the outdoors to, ultimately, act as a catalyst for behaviour change (Harper et al., 2007). How, you might ask, can experiences in the outdoors promote long-term behaviour change? This question is examined in hopes of gaining a better understanding of how the outdoors can be used as a forum to promote the development of self-efficacy and autonomy in young adults with Type 1 diabetes.

The idea of using the outdoors as a forum for behaviour change is not a new one. The roots of the idea stem back to the first organized camping experience, which was developed for adolescents. In 1861, Frederick William Gunn founded the Gunnery School for Boys (Davis-Berman & Berman, 1994). The program used a wilderness setting to promote not only recreational activity but personal development as well (Davis-Berman & Berman, 1994). The idea of outdoor recreation for adolescents appealed to many families and soon other programs began to develop throughout Canada and the United States. By 1872, wilderness camps began to cater to even more specialized populations (Davis-Berman & Berman, 1994).

The healing aspects of the outdoors became even more apparent in the early 1900s when *Tent Therapy Programs* began to develop. This movement is said to have begun at the Manhattan State Hospital when tents were set up in the hospital's courtyard to house the growing number of tuberculosis patients admitted to the facility (Caplan, 1974). After this relocation, the patients showed drastic improvement in not only their health, but also in their overall character (Caplan, 1974; Williams, 2000). Similar movements began to occur at hospitals throughout the United States and the results supported the supposed healing aspects of nature. Since the early 1900s, many camping programs have developed missions to serve unique populations and to meet unique goals.

The first of these camping programs belonged to Camp Ahmek, which was founded in 1929, with the goals of providing recreation and socialization of campers (Dimock & Hendry, 1929). Today, over 300 camps accredited to the Ontario Camping Association exist and among these, several focus on catering to special populations (Ontario Camping Association, 2010a). Some examples include Camp Trillium, which aims to "normalize the

childhood cancer camp experience” (Ontario Camping Association, 2010d, para. 1), Camp Kodiak which caters to children with Attention Deficit Hyperactive Disorder (Ontario Camping Association, 2010c) and Camp Huronda, a residential camp for children with Type 1 diabetes (Ontario Camping Association, 2010b). Common among these camps’ mandates is the aim to influence the development of character (Ontario Camping Association, 2010a).

Outdoor Programs and Character Development

One of the therapeutic uses for camping programs has developed into what is now known as character education (Kinnamon, 2003; Kohn, 2003). Although camps have not been consistently referred to as character developing forums, camps have long since been promoting the development of core values including self-efficacy (McAuliffe-Fogarty, Ramsing & Hill, 2007; Sekine, 1994) and autonomy (Brookman et al., 2003; Powars & Brown, 1990) into their programming. The following outlines how outdoor experiences has been shown to promote long-term behaviour change, particularly changes in self-efficacy and autonomy.

Outdoor experience and behaviour change. As with many therapeutic programs, one of the goals of character development programs through outdoor experience is behaviour change (Williams, 2000). It has been shown, however, that most short-term outdoor programs provide only short-term behaviour change (Hattie et al., 1997). Russell and Phillips-Miller (2002) report that there are certain elements of outdoor programming that promote behaviour change.

Physical activity. First, the incorporation of physical activity into outdoor programming has been shown to be an effective catalyst for behaviour change (Russell and Phillips-Miller, 2002). To support this idea, Caulkins et al. (2006) investigated the role of

physical activity in wilderness therapy for troubled women. Findings of the Caulkins et al. (2006) study support Russell and Phillips-Miller's (2002) idea that physical activity is an important element in creating behaviour change through outdoor programming.

Primitive wilderness living. A second element that has been found to influence change is primitive wilderness living (Russell & Phillips-Miller, 2002). Although primitive wilderness living can only take place in remote wilderness settings, I believe that the idea of primitive living could be incorporated into any outdoor program, regardless of location. Russell, Hendee and Phillips-Miller (2000) describe a primitive lifestyle as having “wilderness conditions [that] facilitate living more simply reflecting a primitive lifestyle which supports the theoretical foundation of wilderness therapy” (p. 214). The foundations of wilderness therapy are important; however, for the purpose of this literature review, they were not discussed. It is worth stating that one of the therapeutic tools used for behaviour change among wilderness leaders was the use of primitive skills, such as fire making (Russell et al., 2000).

Peer feedback. Peer feedback is the third element suggested by Russell and Phillips-Miller (2002) necessary for promoting behaviour change in an outdoor context. As demonstrated by many of the leading outdoor experience organizations including Outward Bound and the National Outdoor Leadership School, group success during outdoor experience is often hinged on the behaviour of individuals in the group (Williams, 2000). Because of this, individuals participating in outdoor experiences will often witness the development of positive peer pressure resulting in both group and individual behaviour change (Williams, 2000).

Participant-leader relationships. The final element influencing behaviour change through outdoor experience relates to the unique relationships formed between participant and leader (Russell & Phillips-Miller, 2002). Although the power of these relationships have been most studied with regards to an adolescent population (Russell & Phillips-Miller, 2002; Russell et al., 2000), based on my personal experience, I believe that these relationships could be just as effective in promoting behaviour change among young adults. The difference, perhaps, lies in the fact that with most outdoor programming for young adults, leaders are viewed as peers as they are similar in age to the participants and often share similar experiences.

Although these aforementioned elements have been suggested to promote behaviour change, there may be many other factors that come into play when investigating change in character through outdoor experience. The role that outdoor experience may play in the development of character, specifically in the development of self-efficacy and autonomy is outlined below.

Outdoor experience and self-efficacy. Many individuals that have been fortunate enough to have had an outdoor experience, particularly in a camping program, can tell you that they seem to develop a sense of confidence from the experience, without ever feeling like they were working on it. Caulkins et al. (2006) studied the effects of a backpacking trip on a group of at-risk females and found that nearly 100% of participants reported increases in self-efficacy both during and after the program. More specifically, participants felt assured that they would be able to overcome future physical and emotional challenges (Caulkins et al., 2006). Upon further investigation, it was determined that it was the physical challenge aspect of the outdoor experience that promoted this change (Caulkins et

al., 2006). These findings hold additional benefits for young adults with Type 1 diabetes, as exercise plays such an important role in diabetes management (Canadian Diabetes Association, 2009).

From my personal perspective, however, I believe that character development is most beneficial when the traits persist long after the outdoor experience is complete. In particular, self-efficacy can provide specific benefits in overcoming the challenges of Type 1 diabetes only when the self-efficacy can be transferred between situations. Propst and Koesler (1998) conducted a study in which they compared the self-efficacy gained and maintained by a group of adults participating in a summer outdoor education course to that of a control group of adults with similar demonstrated interests, skills and outdoor goals. The experimental group showed significantly more overall self-efficacy when compared to the control group (Propst & Koesler, 1998). Self-efficacy measures were collected prior to, immediately following, and one year after the completion of the outdoor programming (Propst & Koesler, 1998). In summary, Propst and Koesler (1998) found that outdoor programming increases both short-term and long-term self-efficacy, something that has not been reported by empirical evidence through other modes of self-efficacy training. Sibthorp (2003) studied the ways in which self-efficacy can be increased through outdoor experience and found that programs in which individuals felt empowered and supported, greater self-efficacy was achieved. Although levels of self-efficacy have been found to be the highest immediately following outdoor experiences, it is still present well above baseline levels when measured up to one year following participation in outdoor programming (Propst & Koesler, 1998). This is a promising finding when considering the benefits that outdoor experience may have for diabetes management.

Outdoor experience and autonomy. A second positive outcome of outdoor experience, with relation to character development relates to autonomy. Wurdinger and Paxton (2003) noted that although autonomy is most often studied during adolescence, it continues to be developed during the young adult years, particularly during one's undergraduate years in university. Autonomy develops most readily when young adults are learning experientially (Wurdinger & Paxton, 2003) and when they are able to make independent decisions, learn individual skills and engage in self-reflection (McKenzie, 2000).

Interestingly, autonomy is best developed, particularly in children, when there is no direct leadership from adults (Korpela, Kytta & Hartig, 2002). As reported by Duncan, Miller and Sparks (2004), outdoor experiences that foster relationships with leaders and those experiences that avoid hierarchies in leadership allow for a greater development of autonomy than those programs that do not focus on relationship building and that have strong hierarchal values among both leaders and group members.

Wurdinger and Paxton (2003) suggest that there are four levels of experience that occur in outdoor programming and each experience plays a different role in the development of autonomy. These levels fall onto a continuum. On the lowest end of the continuum are one-way communication activities such as lecture-style experiences (Wurdinger & Paxton, 2003). On the opposite end of the continuum are experiences in which individuals are given the tools to educate each other (Wurdinger & Paxton, 2003). Although there are some opportunities to promote autonomy through the use of experiences on the lower end of this continuum, I believe that outdoor leaders should be encouraged to facilitate experiences in which individuals are actively involved in their own learning in order to promote the highest

levels of autonomy. These are just a few of the ways that character building can occur in many outdoor programs throughout North America.

Summary

Chapter Two presents the theoretical framework that guided this research, Bandura's (1978) Social Cognitive Theory, with a specific focus on the role reciprocal determination plays in behaviour change. A brief description of the etiology, treatment and general demographics of Type 1 diabetes is provided. Chapter Two also presents a detailed summary of the challenges young adults with Type 1 diabetes face by outlining the major physical, social and emotional challenges reported throughout the literature. These challenges include: maintaining glycemic control; avoiding health complications; resolving body image concerns; changing support from family, friends and healthcare professionals; and coping with both psychiatric disorders and emotional distress. An overview of both self-efficacy and autonomy is presented along with the suggested role of outdoor programming in influencing these traits.

In summary, the development of self-efficacy and autonomy is shown to help young adults with Type 1 diabetes deal with the various challenges they face (Groessl & Cronan, 2000; Hill-Briggs, 2003; Rasmussen et al., 2007; Scott et al., 2002); however, few programs exist that encourage the development of these traits. Participation in outdoor programming is said to play a significant role in the development of both self-efficacy and autonomy (Caulkins et al., 2006; Davis-Berman & Berman, 1994; Harper et al., 2007)—a finding supported by hundreds of outdoor camping programs that exist for children and adolescents with Type 1 diabetes (Diabetes Education and Camping Association, 2009). I found the lack of programming available for young adults with Type 1 diabetes to be alarming, and

thus undertook the following investigation of the role that outdoor experience has on the development of character, and ultimately on diabetes management for young adults. The following chapter outlines the methodology used to carry out my phenomenological research study.

CHAPTER THREE: METHODOLOGY

Chapter Three outlines the research process for the present study. The following chapter provides a detailed account of the research methodology, participant selection, data collection and data analysis procedures, research limitations and ethical considerations. The aim of this study was to understand how outdoor experience influences the development of character among a group of young adults living with Type 1 diabetes, as well as to evaluate how groups such as Connected in Motion may provide these experiences.

Six young adults with Type 1 diabetes between 18 and 30 years of age were involved in this study. Each young adult completed a semi-structured interview and an artifact-elicitation interview, which took place consecutively, as outlined below. All participants involved in this study were female. All participants had been involved in Connected in Motion's Winter Slipstream event in either 2009 or 2010. The data collected throughout the course of this study was used to gain an understanding of the process of character development through outdoor experience and its effects on diabetes management.

Researcher's Social Location

In order to provide the most complete and accurate description of my role as a researcher in this study, it is essential that I first outline my own connection and interest with the organization Connected in Motion and the topic of the research. Because of my passion for the fundamental elements of this research, as is outlined further below, it proves important that I first examine my insider's perspective of this study prior to the commencement of, and as a component of, this research endeavor. The methods I used to manage my own subjectivity in this study are outlined in detail in subsequent sections. In an effort to acknowledge my connection to the participants and study site, as well as the ways

in which I was embedded with the research topic itself, a brief outline of my diabetes connection will follow.

In July 1987, when I was three years old, I was diagnosed with Type 1 diabetes. As outlined previously, Type 1 diabetes is an incurable autoimmune disease affecting pancreatic function, one that causes serious short and long-term complications (International Diabetes Federation, 2009). The memories of my childhood are riddled with what now seem like only minor inconveniences—small bumps in a long and (so far) healthy life path. To a child like myself, however, these small bumps can seem like mountains—missing a day of school here or there for emergency room visits or routine specialist appointments with what seemed like an army of healthcare professionals; or making the trek home from school for lunch each day and visits from my mother at recess to check my blood sugars and to adjust my insulin doses; or having one of my family members randomly selected as a chaperone on every single one of my school trips. These things were all normal, everyday parts of my life. For the most part I was oblivious that these things were different to my friends' experiences.

When I reached the age of eight, my parents, much to my thrill and excitement, enrolled me in a two-week long summer camp session at the local camp for children with Type 1 diabetes. It was there that, even at the age of eight, I began to realize my own independence. I was taught to give myself my own insulin injections (as insulin pump/Continuous Subcutaneous Insulin Infusion technology was not widely available), was taught to monitor and record my own blood sugars and was encouraged to work with the on-site doctors to adjust my insulin doses based on my activity level and my food intake. All of this seemed normal and cool as it was what all of the older campers were doing so naturally.

What an impact those two weeks had on my life! Coming home from camp, I remember reliving each and every story to my parents—the time my cabin mates and I climbed the mountain (later, I realized this was but a small hill) and camped out in a log cabin overnight; the swimming levels I achieved and awards I received; and, most importantly, how I had learned to do my own insulin injections. It was not long after returning from camp that summer that I was allowed to go to my very first sleepover party—something I had, until this point, missed out on.

I only grew from this summer on. I began taking responsibility for more in my life than just my Type 1 diabetes. I began to thrive in school, to participate in intramural and extracurricular sport and to help out with my younger brothers (and not long after, my new sisters). I continued my outdoor experiences at camp for 18 years. I was a camper, a counselor, an area instructor and a program director.

When I turned 18, however, I began to experience many challenges. I was moved from the pediatric diabetes clinic to an adult care clinic. I left the doctors, nurses, dieticians and diabetes educators that I had grown up with over the past 15 years. I remember my first adult appointment vividly. No longer was I encouraged to bring a parent or family member into my appointments with me. The colourful waiting rooms were replaced with sterile hospital cubicles. The healthcare team, who usually greeted me with a warm smile and questions about how school was going, what my plans were for the next month and how my family was doing, were replaced with seemingly uninterested receptionists and self-check surveys. Looking back, it was no surprise that the appointments I, during childhood and adolescence, frequented every three months began to be scheduled every six months, once a

year and eventually, not at all. For five years I went without a healthcare team, a support group or any health advice besides what my local walk-in clinic could offer.

Following my completion of teacher's college, it came time for me to decide a new path in my life. I had the choice to head out into the world and begin a job search for an incredibly rare teaching job or return to school to pursue a Master in Education degree. I knew that if I were to return to school, I would need to be pursuing something that was driven by passion. I knew that I wanted to work with individuals with Type 1 diabetes and I knew that I wanted to incorporate elements of outdoor and experiential education because of the impact they had had on my life. I began to ask myself what it was about my outdoor experiences that had caused such an impact for me and, through discussion with a few close friends, came to the conclusion that all of our friends, who had spent time in the outdoors seemed to have a unique worldview. We all seemed to have certain, shared characteristics. It was then that I decided that I would like to study how outdoor experiences may influence character and to look at what impact these experiences may have on individuals with Type 1 diabetes.

Because of my passion for camping and my connection and commitment to the diabetes camp I had grown up at, I approached the camp's owners, the Canadian Diabetes Association (CDA), to gauge their interest in the camp being involved in research. I proposed that the group of incoming staff, those who were sixteen years of age and preparing to transition into the adult world of diabetes, be involved in my qualitative research study involving focus groups and open-ended questionnaires. Although the initial response from the CDA was nothing but encouraging, approximately five months into my literature review and methodology development, I received word from the CDA that no

research would be welcome at the camp, or any diabetes camp in Canada for the summer of 2009, nor would I be permitted to contact any current camp staff member as a part of an outside research project. This essentially cut me off from all youths with Type 1 diabetes in Canada who were involved in camping programs. At the time, this was devastating news, consequently requiring an entire shift away from the research path I had been preparing for. In the end, however, I believed that my altered research path may be even more rewarding than the pursuit of that study would have been. I believe this to be true not only for myself as researcher, but for the participants and the organization involved as well because of the study's impact on them and the results.

Almost immediately following the cessation of my initial research preparation, I attended a weekend retreat held exclusively for young adults with Type 1 diabetes. The retreat was being run by a newly founded organization called Connected in Motion and was the group's very first event. After attending the weekend retreat, which was held at a YMCA camp in Haliburton, Ontario and focused on winter camping skills and experiential diabetes education, I felt that my choice to pursue Master's research had found new life. I was so excited to meet the many amazing individuals at this event – young people who were going through, or had been through, the same challenges that I faced as a young adult with Type 1 diabetes. I immediately spoke with both my research advisor and Connected in Motion's founder to pose the idea of involving this vibrant group of young adults in my research study. The idea was accepted with enthusiasm and my current research journey thus began.

Since I first attended Connected in Motion's initial retreat, tastefully dubbed Winter Slipstream, in 2009, I became much more involved with the organization. I participated in

adventure races, 5k and 10k runs, canoe trips, hiking excursions and social gatherings.

Through this participation, I connected with countless numbers of people with Type 1 diabetes—newly diagnosed individuals and diabetes veterans; world-class athletes; those hoping to get active for the first time; those who had shared their diabetes stories freely; and those who were just beginning to open up.

I knew that, because of these connections, I would be completing my research with an insider's perspective (Patton, 2002). Patton suggests that it is important that, with regards to qualitative research involving an insider's role, the research acknowledges the role of her own voice and her own perspectives in the research. This is especially important in phenomenological research (Ahern, 1999). There are many ways that the researcher's voice, perspective and bias can be accounted for and acknowledged in qualitative research; however, I followed the steps Ahern (1999) has identified as a process of reflexive bracketing and journal keeping. This process will be outlined in detail in subsequent sections. This next section will begin with a restatement of the purpose of the study and central research questions.

Research Problem

The aim of this study was to understand how outdoor experience influences the development of character, in particular self-efficacy and autonomy, among a group of young adults, between the ages of 18 and 30, living with Type 1 diabetes, as well as to evaluate how groups such as Connected in Motion may provide these experiences. The following research questions were explored:

1. What influence do outdoor experiences have in the development of self-efficacy and autonomy among young adults (18-30 years of age) with Type 1 diabetes in Canada?
2. How might the development of self-efficacy and autonomy affect diabetes management in young adults with Type 1 diabetes in Canada?
3. Is the nature of outdoor experience influential in the development of autonomy and/or self-efficacy among young adults with Type 1 diabetes in Canada?
4. Does participation in the non-profit organization Connected in Motion's outdoor events influence the development of self-efficacy and autonomy in young adults with Type 1 diabetes?

Research Methodology

A qualitative research approach was implemented, which was appropriate given that the data were collected and analyzed based on participants' reports and on the interpretation of their experiences in the outdoors (Merriam, 2009). The following subsection provided an overview of qualitative research including the four parameters necessary for qualitative research to be effective (Merriam, 2009), as related to my own research study and my research situated according to a phenomenological orientation.

Qualitative Research Parameters

According to Merriam (2009), qualitative research is used when one is interested in investigating "how people interpret their experiences, how they construct their worlds and what meaning they attribute to their experiences" (p. 5). Merriam goes on to describe qualitative research as having four necessary characteristics. Qualitative research must: (a)

focus on meaning and understanding; (b) use the researcher as the primary instrument; (c) follow inductive processes; and (d) provide rich descriptions. This study was guided by each of Merriam's four parameters.

Focus on meaning and understanding. The present study centred on the meaning of participants' previous outdoor experiences with a specific focus on the ways in which outdoor experiences influenced change in each participant's self-efficacy and autonomy. As discussed previously, self-efficacy refers to an individual's trust in oneself to achieve a very specific outcome or result (Bandura, 1997). One of the primary aims of my research was to investigate the ways in which self-efficacy influences diabetes management in young adults with Type 1 diabetes, and as such, I ensured that my investigation of self-efficacy specifically related to diabetes management behaviour. In order to measure self-efficacy among my participants, I looked for evidence of self-efficacy in specific diabetes management tasks as demonstrated through interview responses. Grossman et al. (1987) outlined the tasks important to promote diabetes management as insulin administration, blood glucose monitoring, dietary prescription and exercise. Grossman et al. (1987) created a self-efficacy scale, using these diabetes self-management tasks to measure self-efficacy.

Adams (2008) suggests that it is difficult to create a universal definition of what it means to be autonomous, and as such, it is also difficult to create a universal measurement. Measures of autonomy should be based on "the basic existential values that ultimately govern people's lives" (Adams, 2008, p. 45) and because these values differ between individuals, creating a single tool to measure autonomy across a group of individuals proved difficult. Bekker and Van Assen (2006) report, however, that autonomy can be measured by analyzing individual's self-awareness, sensitivity to others and capacity to manage new

situations. Throughout my interviews, I questioned participants in order to investigate the presence of self-awareness, sensitivity to others and capacity to manage new situations, with a specific focus on both how outdoor experiences had influenced these attributes and how these attributes had affected diabetes management. By focusing on these attributes of autonomy, I had hoped to gain a greater understanding of how autonomy is developed through an outdoor experience.

The goal of the present study was to understand how character is influenced by past outdoor experiences and, in turn, how this could influence diabetes self management and ultimately, the development of future outdoor programming for young adults with Type 1 diabetes. I focused on interpreting and understanding participants' reports about their outdoor experiences and aimed to interpret and describe the process of character development through these reports.

Researcher as the primary instrument. Throughout the course of my research, I was the primary instrument for both data collection and data analysis. I was responsible for all interpretation of data as well as for guiding the data collection through semi-structured interviews. One advantage of being the primary instrument of data collection was that I was able to use appropriate question probes, as necessary, to ensure that sufficient information was collected from my participant sample (Merriam, 2009). I was able to probe into participant responses asking for further clarification and depth of response in an immediate manner, which allowed for a more thorough collection of data and for ongoing analysis, something that is an important aspect of qualitative studies (Merriam, 2009). I was able to question collected information as well as to explore unexpected results more thoroughly by using interview probes to delve deeper into information surrounding interesting responses

given by participants (Merriam, 2009). This process was explained in detail in the Data Collection section below. Although the carefully planned qualitative methodology of my research study afforded me many advantages, it also provided some limitations, as was outlined further in subsequent sections.

Inductive processes. The third characteristic of qualitative research is the use of an inductive process of data collection (Merriam, 2009). Instead of using pre-existing hypotheses, theories and concepts, my research aimed to inductively create and identify concepts, hypotheses and theories to help explain the role of outdoor experience in Type 1 diabetes self management and to fully understand the lived experiences of each of my participants. Qualitative research, however, often incorporates both inductive and deductive reasoning (Patton, 2002). Although data was analyzed inductively by allowing themes and sub-themes to emerge organically, the data itself was collected in a way that encouraged responses surrounding the research's intended study topic. By the nature of semi-structured interviewing, questions surrounding outdoor experience, character development and diabetes self-management were posed to participants, leading individuals to address these areas of interest. Often, in terms of qualitative research, inductive analysis is relied on to ensure that the perceptions of the participants are thoroughly understood (Berg, 2004). The specific inductive process of analysis used was discussed more thoroughly in the Data Analysis section of this chapter.

Rich Descriptions. This study provided an in-depth description of the experiences of each participant as well as interpretations of participant experiences from a both the individual's own perspective and from my personal perspective. These descriptions provided me with the opportunity for a detailed and thorough analysis of data. As a tool for

further discussion and, ultimately, description, participant artifacts were used. These were discussed, in detail, with reference to data collection.

Phenomenological Approach

A phenomenological approach was applicable to my research goal of describing the process of character development through outdoor experience. I chose to employ a phenomenological approach to conduct my research as this orientation focuses on understanding both the essence and underlying structure of a phenomenon (Merriam, 2009). In the case of my research, the phenomenon under investigation was the development of character through lived outdoor experiences.

When investigating the lived experience of individuals with chronic illness, phenomenological inquiry is often used (Ironside et al., 2003; McWilliam, Stewart, Brown, Desai & Coderre, 1996). In short, these studies investigate lived experiences of chronically ill patients by examining emotions, feelings, motives and intentions in relation to living with an illness. Because my study also focused on the lived experiences of a chronically ill population, I believed that phenomenological methodology best served my research purposes.

The goal of my research was to investigate the role that outdoor experience played in the development of character among a group of young adults with Type 1 diabetes. By using a phenomenological approach to investigate my research questions, I was best able to investigate the underlying structure of the process by which character is developed among my participants. More specifically, I investigated the ways in which outdoor experience had promoted developments of self-efficacy and autonomy. The data collection methods used in this study reflected those commonly used in phenomenological inquiry. These included

semi-structured interviews (Bless & Higson-Smith, 2000) and artifact-elicitation interviews, which consisted of a participant selected item and an artifact-elicited interview (Clark-Ibanez, 2004). Similarly, the methods of data analysis used in my study were based on the phenomenological approach. These methods were discussed further in subsequent sections.

Selection of Participants

The recommended sample size for phenomenological studies is six participants with up to a maximum of 12 if thematic redundancy is not reached after interviewing the first six individuals, as was discussed further in subsequent sections (Mertens, 2005; Morse, 1994; Ray, 1994; Thomas & Pollio, 2002). Thus, in accordance with phenomenological research design, six participants were interviewed in this study (Mertens, 2005; Morse, 1994; Ray, 1994; Thomas & Pollio, 2002). The aim of this study was to understand how outdoor experience influences the development of character among a group of young adults living with Type 1 diabetes, as well as to evaluate how groups such as Connected in Motion may provide these experiences. It was not my purpose to produce broad generalizations about all young adults living with Type 1 diabetes. Instead, I intended to compare and contrast the experiences of the participants involved in this study with the hopes of gaining a deeper understanding of the interactions between individuals and the outdoors and the ways in which character development through these experiences may influence diabetes management. It was my hope that this exploration would provide support for the implementation of experiential diabetes education for young adults throughout Canada.

Recruitment criteria for this study required participants to be: (a) between the ages of 18 and 30; (b) living with Type 1 diabetes; and (c) a participant in a Connected in Motion Winter Slipstream event in 2009 or 2010. I decided to include those participants who

participated in a Connected in Motion Winter Slipstream event in either 2009 or 2010 in order to allow for the greatest number of potential participants. Both events were identical in format and differed only in the number of participants (25 in 2009 versus 32 in 2010) and gender ratio (approximately 85% female participation in 2009 and 70% female participation in 2010). For the purposes of this study, participants were recruited through the use of the not-for-profit organization Connected in Motion's social media tools (specifically through the Connected in Motion Facebook Fan Page and Twitter account). Purposeful convenience sampling was employed. Convenience sampling allowed for individuals to be chosen who were best "able to help the researcher understand the phenomenon under investigation" (Gay, Mills & Airasian, 2006, p. 113). This is the overall goal of sampling in qualitative research studies (Gay et al., 2006). Furthermore, sampling was considered purposeful in that individuals were chosen based on certain criteria (as listed above) and involved those individuals whom could provide information- rich descriptions of their experiences (Patton, 1990). As such, purposeful convenience sampling provided me with the opportunity to request participation only from those individuals who were best able to describe both their past outdoor experiences and how (or if) those experiences had influenced their character development. I assumed that the potential participants who contacted me with an interest in my research were individuals who were genuinely interested in the phenomenon under investigation and would, as a result, be able to provide rich descriptions of their experiences.

A focus on the young adult population living with Type 1 diabetes was of utmost importance to my study purpose. Participants ranged in age between 18 to 30 years. By definition, this is an appropriate young adult age range (Erickson, 1963). My interest in the young adult population grew as I became more versed in the literature surrounding the

challenges of living with Type 1 diabetes. As outlined previously, the challenges associated with Type 1 diabetes and young adulthood can be broadly categorized as physical (Acharya et al., 2008; Bryden et al., 2001; Juvenile Diabetes Research Foundation, 2009; Saunders et al., 2004), social (Buckloh et al., 2008; Thorpe et al., 2008) and emotional (Blanz et al., 1993; Bryden et al., 2001; Hislop et al., 2007). It was important that I recruited participants from the same program, that being Connected in Motion's Winter Slipstream, as it helped ensure that each individual was, at least, exposed to similar program experiences, allowing me to more fully focus on the differing perspectives of, and the different meanings assigned to, these experiences by each individual.

Within minutes of the participant recruitment information being posted on the Connected in Motion Facebook Fan Page and Twitter Feed, two individuals responded and requested further information. Within one week, information had been sent out to eight individuals. Two individuals informed me that they would be unable to participate. One individual was outside of the age range required for my research (as had been stated on the research poster). One individual felt that she would be uncomfortable sharing her experiences. Three additional individuals informally and verbally expressed their interest in participating should I require additional participants. Because their interest was expressed after the initial six participants had been recruited, I thanked them for their interest and let them know that I had my required number of participants but that I may contact them should I require any additional individuals.

Interestingly, seven out of the eight individuals who initially contacted me about participating were female. The one male who did contact me fell outside of the age range required for participation in my research, being too old. As a result, in the end, all six

participants were female. At first, I was disappointed that my sample was exclusively female, as I believed that it would not allow me to fully investigate the phenomenon of outdoor experience and character development among a group truly representative of the population of young adults living with diabetes. I felt that my investigation would have been more information-rich and would have allowed for a better understanding of the phenomenon being studied should males have been involved as participants in my study as well as females.

The willingness of female participants to be involved in my research was interesting, but not entirely unexpected. Although I had initially hoped for male participants, Connected in Motion's Winter Slipstream participation was overwhelmingly female-dominated (approximately 85% female participation in 2009 and 70% female participation in 2010) and as such, I was not surprised by my entirely female contingent of participants.

A total of six females participated in this study. Participants ranged in age from 22 to 30 years and had been living with Type 1 diabetes for anywhere from 12 to 19 years. Of the six participants, five were using insulin pumps (CSII therapy) to manage their diabetes while one participant was using MDI therapy. Three of the individuals had participated in both of the Connected in Motion Winter Slipstream events 2009 and 2010, while the remaining three participated only in Winter Slipstream 2010. A summary of the participant demographics is presented in Table 1.

I believe that my insider role as a researcher allowed a more open and comfortable environment between my participants and myself during interviews. It also reduced much of the time usually spent building rapport during the beginning stages of in-depth

Table 1

A Breakdown of Participant Demographics

Demographic	Ashley	Emily	Stefanie	Shondra	Britney	Hayley
Age	29	30	23	25	22	27
Years with diabetes	19	18	13	12	12	17
Type of insulin administration	Pump	Pump	Pump	Pump	MDI	Pump
Number of winter slipstreams attended	1	1	2	2	1	2
Artifact	Tattoo	Photograph	T-Shirt	Picture Frame	Bracelet	Feather
Previous camping experience	No	No	No	Yes	Yes	Yes

interviewing and allowed more time to focus on the phenomenon being studied. Additionally, I shared many social similarities with the participants including lived experience as an individual with Type 1 diabetes, being a young adult and being interested in outdoor adventure opportunities.

Following initial contact by potential participants, all correspondence followed a pre-developed electronic communication guide (See Appendix A). This guide was comprised of templates for initial contact with participants, initial contact with any additional individuals requesting participation after recruitment was completed, member checks and participant feedback.

Upon receiving an initial indication of interest from individuals and confirmation that they indeed fit the required participation criteria, I forwarded to each potential participant a Formal Letter of Invitation (See Appendix B) and Informed Consent (See Appendix C). It was important for participants to review the informed consent, sign and return it to me via mail or email to ensure that they had time to digest the information I provided them with and to allow them significant time to receive further clarification about my study should they require it. Unfortunately, it took close to three weeks to receive all informed consent back from six of the eight individuals who initially requested information. Upon receipt of all participants' signed informed consent form, a time and location for the semi-structured interview was decided upon.

Both the time and location of the semi-structured interviews were scheduled based on the preferences of participants. According to Herzog (2005), choosing an interview location is one of the most neglected parts of qualitative research; however, the interview location often affects the quality of information collected. When choosing

an interview location, the needs of both the participant and the interviewer need to be taken into account (Herzog, 2005). Adler and Adler (2008) report that interviews that deal with highly emotional, sensitive or private issues should take place in the home of the participant. For the purpose of my research, this was not a necessity, but was allowed as an option. Limiting the location of the interview to the home of the participant may have, in turn, limited the quality of information conveyed by the participant if the participant is uncomfortable discussing the topic of the research in the presence of family members or housemates (Adler & Adler, 2008). Instead of limiting the interview location to the home, participants were asked to choose a location that was comfortable, convenient and distraction-free (Sugarman & Sulmasy, 2001). Kidd (1993) suggests that, in phenomenological research, interview location choice should always be given to the participant. Participants will often choose a location where they feel comfortable, which is often also the most efficient location for an interview (Kidd, 1993). Consequently, three of the six interviews took place in the home of the participant, two took place in quiet coffee shops and one took place at the participant's place of work. All but one interview, which was scheduled at mid-day, took place in the late afternoon or early evening at the request of the participant.

Data Collection and Methodological Procedures

Data were collected from participants through two methods (a) in depth semi-structured interviews and (b) artifact-elicited interviews. These interviews took place consecutively. Due to limitations surrounding the geographic location of participants, financial resources and available time, it was decided that both the semi-structured interview and the artifact elicitation interview would take place consecutively during one

meeting between the participant and myself. Although only one in-person meeting took place, validity was ensured through the processes of member checking via email as is described in detail below.

Instrumentation

Both semi-structured interviews as well as artifact analysis interviews were used as data collection methods in this study. Both interviews took place consecutively with each participant during one scheduled interview block. These will be discussed in detail below.

Semi-Structured Interviews. There is debate as to the appropriate length of time that one should schedule for an interview. Berg (2004) refers to “long interviews” as those lasting for longer than one hour, asserting that this length may result in an individual’s refusing to participate because of the time commitment needed. The other challenge with an interview of this length is that it may result in the participant losing interest and withdrawing from the interview before completion. Berg (2004) defines “too short” interviews as those that do not always allow enough time for detailed information to be collected. As such, no definitive time demarcation was set for my interviews, although I informed participants to expect to commit up to 1.25 hours for the semi-structured and artifact-elicitation interviews, combined. In the end, semi-structured interviews lasted between 40 and 70 minutes, with the average being 45 minutes. This timeline included research introduction and informed consent review. Because of my previous relationship with each individual and because of the participants’ interest in the phenomenon being studied, interviews commenced with less rapport building per se than I had originally experienced.

The interviews followed a semi-structured format. The semi-structured interviews, which are sometimes referred to as semi-standardized interviews (Berg, 2004) were researcher-led and although I came prepared with a set of questions, were open to follow the leads and direction of the conversation with the participants (Hatch, 2002). The purpose of these semi-structured interviews was to gather detailed information about the outdoor experiences of the participants. Specific focus was given to how these experiences had influenced life with diabetes and the development of efficacy and autonomy (see Appendix D for interview script).

In order for data collection to go as smoothly as possible, extensive work went into the planning of each interview. Detailed interview scripts were created through consultation of relevant literature related to character development, outdoor experiential education and diabetes management as well as through examination of phenomenological interview best practices. These best practices included ensuring that the interviews were semi-structured with open-ended questions and allowing for deviation from the interview script should the participant wish to stray from the expected progression of the interview (Moustakas, 1994). I completed all interviews myself in order to allow for early stages of data analysis to occur simultaneously with data collection (Auerbach & Silverstein, 2003). By conducting all interviews myself, a comfortable and relaxed environment was produced. This comfortable environment may not have occurred had I not had an insider's perspective as a researcher.

Artifact-elicitation interviews. The use of artifacts has been employed in several qualitative investigations involving outdoor and experiential education. Philpott and Gray (2007) collected artifacts in the form of peer assessment and journal reflections

in order to gain insight into the complexities associated with learning to teach outdoor and experiential education. An artifact was requested of each participant and was used along with interviews and video observation to ensure credibility of data (Philpott & Gray, 2007). Findings of the study suggest that although the use of artifacts allowed the researchers to gain insight into the thought processes regarding teaching and learning in outdoor education, artifacts might sometimes serve to address only positive aspects of an experience, and not the negative ones. Similarly, Loeffler (2004) used student photographs to investigate how students created meaning during outdoor education experiences. These photographs were used as the basis for interview discussion as data for Loeffler's (2004) qualitative study. In brief, Loeffler (2004) found that using photographs allowed participants to share experiences and stories about these experiences more easily. Loeffler's (2004) study further suggests that the use of photography facilitates participants' understanding and connections to outdoor experiences.

Several qualitative researchers support the technique of interviewing based on an artifact. Clark-Ibanez (2004) investigated methods involved in photo-elicited interviews. Clark-Ibanez (2004) asserts that photo-elicited interviews, described as interviews in which participants use photographs as a medium for discussion, are most appropriate when observation of participant experiences is too complicated based on time or financial constraints. Further, artifact-elicited interviews can ease researcher-interviewer rapport and can provide structure for an interview (Clark-Ibanez, 2004).

Interview and Reflection Notes. Interview and reflection notes were created following the completion of each interview, as well as during interview transcription. I

found these research journal entries to be extremely helpful in many ways. First, they helped to contextualize the overall structure of this methods section. Although my preliminary methods were guided by the recommendations of several qualitative academics (Berg, 2004; Merriam, 2009; Moustakas, 1994) when it came time to report the ways in which my data collection and analysis actually played out, my research journal guided this writing. Secondly, my research journal allowed me to reflect on my interview methodology and data collection procedures as they were occurring and to make subtle changes as needed. This is discussed further below.

Procedure

Data collection was split into four phases. Phase one involved the semi-structured interview and was introductory in nature. As described below, this phase included an introduction of myself, of my research and of the interview process. Phase two was the core concept phase. This phase involved addressing the major research study questions. This phase was comprised of seven key questions, each with four interview prompts. The core concept phase took, on average, 45 minutes in total. Phase three involved the artifact-elicitation and took, on average, 20 to 30 minutes to complete. Finally, phase four, the conclusion, served as a summary of both the semi-structured interview and the artifact elicitation and provided each participant with the opportunity to elaborate on, confirm and alter any responses given during phase two and three of the data collection process. Each of these four phases will be outlined in detail below.

Phase one: Introduction. During the first phase of the semi-structured interview, I introduced myself to participants and reminded them of the purpose of the research study. Although I had an insider's role as a researcher, none of the participants

were familiar with my academic career or with the research I was conducting, further than had been explained in the informed consent process. I found this introduction phase a great opportunity to set the tone for the rest of the interviews. I was able to step away slightly from the peer relationships I had with participants and introduce myself as a researcher.

I provided an overview of the interview schedule, followed by a detailed description about issues of confidentiality. Participants followed along with a hard copy of the Informed Consent as I discussed the risks and benefits of their participation in my study. Each participant was asked if any further clarification was needed and if they had any questions related to the informed consent that they had previously signed. None of the participants requested clarification or asked questions at that point.

After introducing myself as a researcher during the introductory phase, I then went over the informed consent with each participant. Although informed consent had been signed and returned prior to the scheduling of any interview, I felt it was important to repeat the purposes, the benefits and the possible risks with each participants, as well as reiterating the availability of support in the instance that any participant were to have encountered psychological trauma or demonstrate feelings of distress during the interview process. I ensured that each participant understood the process by which the interview would be recorded and by which confidentiality would be maintained. It was at this time that participants were asked to choose a pseudonym with which they would be referred to with from this point forward. Pseudonyms were used to replace their real names during data collection, data analysis and presentation of results. Four of the six individuals promptly chose pseudonyms upon request (Britney, Stefanie, Hayley and

Shondra). Two of the participants asked that I assign them a pseudonym (Emily and Ashley). The pseudonyms were used to ensure anonymity and confidentiality for all participants.

Collecting demographic information, which was recorded directly on the blank interview script, concluded the introductory phase. To maintain confidentiality, this information was not collected on the voice-recording device. Demographics collected included participant date of birth, date of diabetes diagnosis, gender, type of insulin administration (i.e., insulin pump or multiple daily injections) and number of Connected in Motion Winter Slipstreams attended.

The final portion of the introduction phase included an explanation of how the voice recorder would be used during the interview and the ways in which data would be stored, transcribed and destroyed following the completion of the interview. Participants were given the opportunity to ask any final questions and were informed that a break of 15 minutes would be offered approximately half way through the interview during which time the voice recorder would be shut off. Whenever participants required additional breaks, at any time, they were asked to inform me and I advise them that the interview and recorder would be paused. The procedures of post-interview data transcription, member checking and data deletion were explained to the participants. The introduction phase took between five and ten minutes to complete and was not included in total interview time.

Phase two: Core concepts. Phase two of the interview was the core concept phase (see Appendix D). The voice recorder was turned on immediately prior to the commencement of the core concept phase of the interview. No names or other obvious

personal identifiers were recorded on the voice recorder. This phase included the bulk of the semi-structured interview process and focused on the core concept under investigation—the phenomena of outdoor experience, character development and diabetes management. Seven key questions were presented surrounding the participants' outdoor experience, development of self-efficacy and independence, involvement with Connected in Motion and diabetes self-management. Each key question was supplemented by four question prompts. When designing my interview script, I planned to use these prompts only if it was necessary to encourage more depth in the discussion. During each of the interviews, I found that most question prompts were needed to produce detailed descriptions of experience. Question prompts were created based on information presented in the literature review. For example, participants were asked to describe their feelings related to autonomy. To further prompt discussion, participants were asked about any changes in their feelings about themselves, about other people and feelings about their abilities to manage new tasks. As mentioned previously in the literature review, feelings about oneself, about others, sensitivity towards others and ability to manage new tasks are considered indicators of autonomy (Bekker & Van Assen, 2006).

The core concept phase began with a very broad and open-ended question asking participants to describe their outdoor experience. Perhaps because this was the first interview question, all participants required interview prompts. I encouraged participants to consider the types of activities they had participated in, the duration of these activities, the people they participated with and the time in their lives when they participated.

Next, I asked participants to describe their participation in Connected in Motion's Winter Slipstream weekends. Five of the six participants freely spoke about this experience and required only a few of the interview prompts that I had prepared. One of the participants was more reserved and required extensive prompting. This required me to spontaneously generate even more interview prompts than I had come prepared with. This process of generating additional interview prompts occurred organically without interrupting the natural flow of the interview. For example, when one particular participant answered simply, "Yes" in response to the interview prompt relating to the ability to manage new tasks and activities, I further prompted her to describe the types of new activities she managed and the ways in which her management had changed.

The next three questions related to character development. Participants were asked to describe their feelings about their own autonomy and self-efficacy and, if these traits existed, how these changes may have influenced diabetes management. Interview prompts were developed through an examination of the definitions of autonomy and self-efficacy as outlined in Chapters One and Two. Prior to posing questions relating to autonomy and self-efficacy, individuals were provided with definitions of the terms. I felt that providing these definitions was important as it helped to ensure that participants were employing similar definitions and word usage throughout the interview.

When discussing autonomy, participants were eager to talk about their ability to manage new tasks and often related the management of these new tasks to their diabetes management. This provided a natural flow into my questions about the role of character development in diabetes management. Feelings of self-efficacy were investigated with

relation to diabetes management efficacy. This included feelings of efficacy in their ability to administer and adjust insulin, to monitor blood sugars, healthy eating and exercise and activity.

Next, participants were asked to describe or elaborate on any experience that they felt had been truly influential in their development of character. Through their prior descriptions, each participant spoke about changes in character development. I had been prepared, however, to omit this question if discussion during the interviews had not touched on the changes in self-efficacy and/or autonomy occurring during outdoor experience.

Finally, participants were asked to describe the impact that Connected in Motion had (if any) on their outdoor experience. Participants were asked to consider their level of participation in outdoor activity in the past compared to today. They were asked to consider the nature of the outdoor experiences they had had. Participants were asked to comment on any change in the nature of their outdoor participation (if applicable) as well as on any physical, social and/or emotional changes that had occurred since participation with Connected in Motion.

Interview break. In between the semi-structured interview and the artifact-elicitation interview, up to 15-minutes was taken as a scheduled break, as is outlined further below. This break allowed both the participant and myself, as the interviewer, time to reflect, rest and relax. Despite providing 15 minutes for a break, most participants requested only five minutes and seemed excited to begin the second interview. Looking back, this may have happened for a number of reasons. It is possible that I planned the break at an inappropriate time. Breaks were taken following

the semi-structured interviews, but prior to the artifact-elicitation interview. Perhaps individuals were excited for the opportunity to share their artifacts and were eager to recommence the interview, therefore cutting the break short.

Another possible reason as to why breaks may have remained shorter than planned might relate to the time constraints of participants. As mentioned previously several participants chose to have interviews take place at their respective places of work. I felt that this might have reflected the busy lifestyles of these participants. Other individuals worked with me extensively to schedule and re-schedule interview times due to conflicting commitments with work and personal life. Again, this suggests that although individuals seemed excited to participate in my research, they may have had somewhat rushed schedules and as a result, requested break times to be cut short.

Phase three: Artifact-elicitation. The artifact-analysis interviews took between 20 and 30 minutes, with the average being 25 minutes. The semi-structured interview best practices, as outlined in detail above, were followed during the artifact-elicitation interview, including the methods employed to develop the artifact-elicitation interview script. This interview involved the artifact that each participant was asked to bring to the interview. Artifacts are often used in the methods of phenomenological inquiry. Houkes and Vermaas (2004) report that artifacts can “serve as extensions of our body” (p. 53) and can be effective in describing lived experiences. Artifacts can also indicate the feelings, experiences and knowledge of participants and may include things such as diaries, bulletin boards, documents, letters, photographs and videotapes (Jensen, 1989).

For the purposes of my study, participants were asked to select an artifact that represented a meaningful outdoor experience. Upon receipt of a participant’s signed

informed consent, the individual was sent further interview information. This included a request for each participant to bring to the interview an artifact or item that each individual felt represented an important and meaningful outdoor experience. Individuals were given examples including poems, stories, journal entries, artwork, landscape photography or other personal items. Two of the four participants contacted me personally via email to verify that the items they had chosen were appropriate. In accordance with ethical standards, participants were instructed that if a photograph was chosen as an artifact, it must not depict the faces of any individuals other than the participant in order to ensure anonymity of all individuals.

The artifacts that participants brought to the interviews included a rope bracelet, a photograph of a horse, a tattoo, a picture frame, a t-shirt and a black feather. During participant interviews, artifacts were displayed by being placed on the table or desk between the participant and myself. Each individual was asked to reflect on and describe verbally, why she chose this item to represent outdoor experience. Participants were asked to describe how their respective artifact demonstrated the influence that outdoor experience has had on their lives. These descriptions were driven by three open-ended key questions along with several question prompts.

Each participant was first asked to describe, in detail, the experience that her artifact represented. Participants were prompted to describe both the physical artifact and the meaning behind the artifact. They were asked to describe when their artifact was created, how it was created and who created it. Finally, each participant was asked to describe how the experience represented by the artifact had influenced her as an

individual with diabetes. Each was asked to consider her feeling towards diabetes and her diabetes management as a result of this experience.

The artifact-elicitation interview provided me with the most detailed descriptions of participants' lived experiences in the outdoors and included very animated stories. Participants' descriptions often included direct reference to the artifact as well as many related stories. One participant found herself describing a whole series of experiences triggered through her artifact story then stopped, seemingly embarrassed and apologized for talking about things that "must have been so boring and off topic." I encouraged her to continue, letting her know that I was more interested in hearing about the meaningful outdoor experiences that she had and her feelings about those experiences than simply hearing what she thought would be the right answer to my questions.

Finally, following the completion of both the semi-structured interview and the artifact-elicitation interview, the conclusion occurred, which involved a summary of the interview questions, an opportunity for participants to change or elaborate on any answers and a verbal thank you to participants for their time. This is discussed in detail below.

Phase four: Conclusion. Following the completion of both the semi-structured interview and the artifact-elicitation interview an interview conclusion occurred, which involved a summary of the interview questions, an opportunity for participants to change or elaborate on any answers and a verbal thank you to participants for their time, which will be discussed further below. During this phase I took time to summarize what I understood from the interviews. I provided an opportunity for participants to make any corrections to my interview summary that they saw fit, as well as an opportunity to add

to or elaborate on any points. Participants were thanked for their time and the voice recorder was turned off and locked.

Interview and Reflection Notes

Following each interview, I immediately took time to reflect on the data collection process as well as the unique and interesting aspects of the interview. These notes formed the basis of my research journal. In these reflections, I made note of participant body language (e.g., eye rolling), vocal intonations (e.g., harsh tones or soft tones) and observable actions (e.g., uncomfortable shifting, hand gestures, the shuffling of papers or the checking of a watch). I also recorded my own reactions to the interview, to participant responses and to the interview conditions. I began to keep notes of what I believed to be emerging themes. Immediately following the interview, notes were taken directly on the interview script under the corresponding interview question. Following each interview and once the participant and I had parted ways, I spent 15-20 minutes writing an interview reflection in my journal. This reflection was dated and labeled with the participant's pseudonym and the interview number (i.e., Ashley - #1). In this reflection, possible early emergent themes were noted, modifications for subsequent interviews were considered, points of surprise and confusion were documented and my overall learnings were explored. These reflections were stored in file folders corresponding to each participant's pseudonym. These folders were kept in a locked filing cabinet in my home office.

At no time during my interviews did any participant appear uncomfortable or distressed in any way. Had this occurred, however, I was prepared to stop the interview, to report this information to my thesis advisor and to Brock's research ethics board and

to direct the participant to contact the distress centres provided in my informed consent. During the data collection process, I was prepared to recruit additional participants in the event that I failed to attain thematic redundancy, as demonstrated through a lack of new information being presented (Mertens, 2005; Morse, 1994; Ray, 1994; Thomas and Pollio, 2002) with the six participants; however, as is outlined in detail with reference to data analysis, thematic redundancy was reached by the sixth interview.

Data Analysis and Management of Subjectivity

Besides ensuring an inductive focus, I found it quite difficult to determine a definitive method appropriate to analyzing my data according to phenomenological practices. Throughout my preparation for data analysis, I found myself considering many different phenomenological and qualitative data analysis methods including the seven-step analysis method (Colaizzi, 1978), the formulation of relevant data (Auerbach & Silverstein, 2003), repeating ideas and themes (Auerbach & Silverstein, 2003) and the constant comparative method (Morse & Field, 1998). These methods were considered based on their use in two other phenomenological research studies (Boeije, 2002; Skorobohacz, 2008). I found that there were several aspects of each method that worked well and were fitting with my own research methodology. As I reviewed each method of data analysis, I combined the three aforementioned methods to formulate my own unique data analysis procedure. Ultimately, the process of data analysis was comprised of two phases, the management of subjectivity phase and the data analysis phase. Each of these phases was discussed in detail.

Management of Subjectivity

In accordance with phenomenological best practices, it was important for me to bracket, or set aside, my own beliefs and biases regarding the phenomenon being studied in order to be able to uncover the true essence of the participants' experiences—a practice employed by Koch (1995), Groenewald (2004) and Moustakas (1994)—to increase objectivity. It was important to me that subjectivity be managed prior to the commencement of data analysis so that I could maintain a high level of subjectivity throughout all aspects of data analysis. The process of subjectivity management was novel to me as I had never been involved with phenomenological research outside of the completion of assigned readings for various Master of Education courses at Brock University. After consideration of several methods for subjectivity management in phenomenological inquiry, as presented by Parse, Coyne and Smith (1985), Davis (1973), Knaack (1984), I decided to adopt the methods for bracketing, or epoche, as described by Ahern (1999). Ahern's (1999) methods followed a logical and step-like process, which, as a beginner researcher, I found very appealing. I appreciated the way that Ahern's writings provided a wealth of information for the beginner phenomenological researcher, without being too overwhelming. While presenting recommended steps for managing subjectivity, Ahern also provided practice activities and examples taken from other phenomenological research studies—a practice that helped me to gain confidence in my own research abilities. Ahern describes the process of reflexive bracketing as consisting of a series of eight steps. In consideration of my own research, steps one through five of Ahern's (1999) method applied to the

maintenance of subjectivity within my study, while steps six through eight applied to the actual data analysis procedure and was outlined in detail in subsequent sections.

With reference to management of subjectivity, I first identified the issues relating to my research that I took for granted. Of these issues, the most prominent was the fact that participation in Connected in Motion's Winter Slipstream weekends was something that only a fairly financially privileged group could take part in. It is estimated that the daily cost of living for an individual with Type 1 diabetes is between 2 and 5 times the cost of an otherwise healthy individual (Ettaro, Songer, Zhang & Engelgau, 2004). For example, as an individual with Type 1 diabetes using CSII therapy, at the time of this study I incurred a weekly medical cost of approximately \$130. This cost is based on the purchase of glucose testing strips (\$1/test, 10 tests per day), insulin pump sites (\$17.50/site, 2 sites minimum per week), insulin pump reservoir (\$3.50/reservoir, 2 reservoirs per week) and actual insulin. Although I realized that many individuals incur some sort of medical costs on a weekly basis, I felt that it was important to include this information in my management of subjectivity. Based on the additional financial cost of participation (\$200 for Connected in Motion's Winter Slipstream in 2009 and 2010) the attendance of some individuals may have been limited.

Next, according to Ahern (1999), it was important for me to identify the areas in which I knew I would be subjective in both my data collection and analysis. Auerbach and Silverstein (2003) recommend identifying the theoretical frameworks that have guided my interest in the phenomenon being explored. The development of my research questions was guided primarily by Bandura's (1978) Social Cognitive Theory. In order to remain aware of my subjectivities, I kept a written copy of the concept of reciprocal

determinism, as taken from Bandura's (1978) theory in front of me during the data analysis phase. Keeping this guiding theoretical framework in front of me during data analysis allowed me to understand why, at some points, I may have been coming to conclusions quickly. For example, according to reciprocal determination, behaviour, environment and personal factors all act upon and influence one another (Bandura, 1978). When analyzing the interview scripts I began to recognize the emerging theme related to feelings of normalcy. By reminding myself of the concept of reciprocal determination, I felt encouraged to analyze not only the environment as impacting on feelings of normalcy, but also the behaviour of the individuals in the group.

It was important that I clearly identify areas of potential personal conflict during and as a result of my research (Ahern, 1999). My personal involvement with Connected in Motion through this study could have created a conflict in terms of my own involvement with other diabetes organizations. Because I was involved on a personal level with many diabetes organizations (the Diabetes Hope Foundation, the Diabetes Education and Camping Association, Children with Diabetes Inc., the Diabetes Exercise and Sport Organization) I believed that there might have been a possible conflict in terms of competition for my time as a volunteer. Completing a study involving Connected in Motion required a significant amount of time to be committed to researching the cause and as such, I was able to spend far less time being involved with other organizations. Fortunately, I was able to avoid this conflict by managing my time appropriately and taking on only the responsibilities that I could handle.

Next, Ahern (1999) recommends identifying those individuals who may have benefited from this research and how their interest may have influenced my findings. As

previously mentioned, the not for profit organization, Connected in Motion, was expected to benefit from this research. I expected that the participants involved in the study would be participating with the hopes of promoting the organization and alternative diabetes education practices in general.

Ahern (1999) suggests the recognition of feelings that could represent a lack of neutrality. This recognition of feelings was facilitated through the reflections completed following each interview. Any time a positive or negative emotion was noted, I attempted to understand why these feelings emerged and what these feelings might mean in terms of my own bias. I facilitated this understanding by actively writing down, in a separate section of my journal, the emotion I had noted in my research reflections and the corresponding situational factors. For example, in one instance I had written in my research journal "Emily spoke of her inability to participate in the physical activities she had once been involved following her move from British Columbia to Ontario. This made me feel somewhat defensive towards Ontario and the plethora of physical activities we have for our enjoyment." I wrote down this defensive feeling and described how this feeling could have been initiated because of the fact that I had never traveled outside of Ontario. Because I had never traveled outside of Ontario, I did not know, first hand, of the other physical activities that may have been common in other areas, particularly British Columbia and I had felt, perhaps, that Emily was alluding to the idea that British Columbia may be better in a sense than Ontario. In terms of my own bias, I noted that perhaps this might point to my lack of neutrality in terms of physical location of outdoor experience from a geographical perspective.

Data Analysis

After ensuring that I had a firm understanding of my own bias and subjectivity through the steps outlined above, I was excited to have the chance to actually get familiar with the data and to being the process of analysis. The data analysis methods for my study were developed based on the recommended methodology of Ahern's (1999), Colaizzi (1978) and Auerbach and Silverstein (2003). The work of each of these qualitative researchers and academics was incorporated into my own analysis procedures and will be outlined below.

Steps 1-4 of Colaizzi's (1978) seven-step method for phenomenological analysis were used to loosely inform my data analysis. These steps include the following:

1. The interview transcripts were reviewed and familiarized.
2. Returning to the data, focus was given to the aspects of the transcripts that were seen to be relevant to the phenomenon of interest.
3. Each piece of relevant text was examined for meaning.
4. The meanings of each of the interviews were compared and contrasted, creating a cluster of relevant themes.

In accordance with Colaizzi's (1978) first step, I listened to each interview several times before transcribing. During these listenings, I familiarized myself with the language of each participant. For example, I listened for whether participants used the term diabetic or person with diabetes, as will be discussed in detail in Chapter Five. I also listened for interesting voice intonation and tone (evidence of excitement and pauses), and began to develop an understanding of the experiences each participant described.

I was able to transcribe four of the six interviews within 24 hours of the individual interview completion. These interviews were transcribed on April 5, 9, 22, and 30, 2010. Due to other work commitments immediately following my fourth interview, the remaining two interviews (interviews number five and six) were transcribed within one week following those two interviews. The transcription for interview #5 was completed on May 4, 2010. The transcription for interview #6 was completed on May 5, 2010. As I transcribed the interviews, I kept detailed research journal entries, which included notations about emerging themes. For example, I noticed a theme relating to the concept of normalcy begin to emerge as a result of an analysis the first two interviews. Noticing this emergent theme early allowed me to add an additional prompt relating to feelings of normalcy when asking individuals to describe the impact that Connected in Motion's outdoor experiences had on their feelings of self. Additionally, the idea of Connected in Motion's Winter Slipstream event allowing individuals to "feel like a kid again" and to shed some of the daily diabetes responsibility began to recur after the third interview. For my fourth through sixth interviews, I prompted individuals to describe more about their childhood experiences that may have led them to participate in a Connected in Motion experience. I did not feel it was necessary to contact the participants from the first two interviews and to give them the opportunity to answer the new prompts. The first two participants had discussed the theme of the new prompts (related to normalcy and childhood pursuits) in such detail that their reports had actually stimulated the creation of these new prompts. As such, I felt that it would be redundant to further question these individuals.

I believe that I reached thematic redundancy during my sixth interview, as demonstrated through a lack of new information being presented (Mertens, 2005; Morse, 1994; Ray, 1994; Thomas and Pollio, 2002). Thematic redundancy was demonstrated as, after my sixth interviews, participant descriptions, although unique, were not entirely novel themes (Mertens, 2005). My interview transcription notes supported this decision, as did the interview reflections recorded in my research journal.

Interview transcripts were read a minimum of two times, were sent to participants for member checking (Merriam, 2009) within one week of the interview transcription and were re-read upon return of the transcripts to note any changes or additions, as well as to address any concerns raised by the participants. Each transcript was returned to me within one week of being mailed out to respective participants. Two of the six participants made changes, although very minor, to the interview transcripts. Ashley elaborated on the story of her artifact. Britney included some further information about her family's involvement in her childhood outdoor experiences. Each of the remaining four participants returned her transcript with a note explaining that they felt the transcript reflected her true meaning.

During step two, the texts that I felt was important to emerging themes as well as ideas that were repeated frequently were highlighted using a standard word processor. These were labeled as *relevant text* and were copied into a separate word document titled with each participant's pseudonym and stored in an electronic document folder labeled for each participant. A piece of text was labeled as relevant if I could answer "Yes" to any of the following questions, as taken from Auerbach and Silverstein (2003):

- Does it relate to your research concern?

- Does it help you to understand your participants better? Does it clarify your thinking?
- Does it simply seem important, even if you can't say why?

For example, Ashley stated that: "It was great not being the only person having to test my blood sugar...or taking a quick break for some juice or Dex" (April, 2010).

I deemed this text as important as I felt that it was applicable to the feelings created by outdoor experiences. This text was eventually grouped within the theme relating to feelings of normalcy, as will be discussed in subsequent sections. Identifying relevant text was important, as it allowed me to create more manageable sized documents with which to conduct data analysis. Transcripts were re-read in their entirety, following this creation of overarching themes, which allowed me to consider any text that was not originally deemed important. In several cases, I was able to use pieces of this orphaned text to add substance to several overarching themes.

The methods of Auerbach and Silverstein (2003) were incorporated into my analysis process as the details they provided helped guide me through steps 3 and 4 of Colaizzi's (1978) method with specific examples and practice exercises. Auerbach and Silverstein (2003) provided more detail regarding the process of isolating relevant from non-relevant text, of pairing relevant texts to create repeating ideas, of combining repeating ideas to create sub-themes and of combining seemingly abstract sub-themes to create overarching themes.

Auerbach and Silverstein (2003) provide sample exercises for individuals beginning the process of relevant data isolation. In one such exercise, several excerpts from a qualitative research study investigating the role of Haitian father's in family life

were presented. As per the exercise instructions, I read through several paragraphs of texts and underlined any text that I felt related to the role of Haitian fathers in family life, that I felt helped me to understand the women being interviewed in the study, or that I felt could be important, even if I couldn't say why (Auerbach & Silverstein, 2003). Following the reading and underlining of this data, Auerbach and Silverstein (2003) would provide the pieces of text that they had deemed important with the reasoning behind each. I then compared their work, to my own relevant text. After practicing with the data set provided by Auerbach and Silverstein (2003) I felt confident enough to begin sorting the interview transcriptions of my own participants. Whenever I felt confused about whether or not a piece of data was relevant enough to include in my new data set, I chose to include it. Auerbach and Silverstein (2003) recommend including this confusing data in order to avoid the risk of missing out on a piece of information that may be deemed important as themes begin to emerge.

In order to pair relevant texts with the ultimate goal of creating a set of repeating ideas, I compared the relevant text within each interview. This relevant text was colour coded in order to pair text that was similar. On average, relevant text was grouped together with a minimum of one other idea, with a maximum of up to four additional ideas. These ideas were labeled with a title that I felt encompassed the participants' meaning associated with the relevant text. In order to help ensure the congruency between participant meaning and repeating idea labels, titles were comprised of language used by the participants. For example, one repeating idea which was comprised of the relevant texts: "I think it's a very understanding group of people and everybody was always willing to help each other out;" "There is a level of understanding

that I feel I have in the group,” “I think just being able to meet people that deal with the same sort of issues day in and day out made a difference” and “You know what they are going through and they know what you are going through and there is no judgment passed about it.” These relevant texts were labeled with the title: *We all understood each other*. After completing this process, I had comprised a collection of 46 repeating ideas. Repeating ideas were different than the sub-themes and themes created, as outlined below, in that repeating ideas were the smallest constituent of grouped data.

Following this process, these repeating ideas were combined across all interview data sets to create repeating sub-themes. In order to accomplish this, I used a cut and paste method. The 46 repeating idea sets were printed and cut out to allow me to physically sort through the ideas and combine them to, eventually, form a set of fifteen repeating sub-themes. I went through this process three times over the course of one week, attempting to look at the data set with a fresh set of eyes each time. Following my third sorting, I contacted the participants from my study and asked them to look over the repeating sub-themes and to comment on the accuracy of the sub-themes in relation to their intended meanings. Four participants responded via email to confirm that the themes seemed to represent the meaning they associated with their experiences. For example, one participant responded saying, “I really appreciated seeing these. They represent my thoughts very well. I look forward to seeing your final product.” Two participants did not respond.

The last step in my data analysis method was to combine emergent sub-themes to create a series of overarching themes. It was my goal that the fifteen emergent sub-themes combine to create no more than six but no less than three overarching.

In total, six overarching themes were created. I found that, although two of my overarching themes (Promotion of Personal Growth and The Recipe for Success) related somewhat to character development, there was an overwhelming feeling that my research had strayed from addressing my original research questions. The results pointed toward there being a strong focus on life with diabetes (relating to the theme Redefining What is Normal), on the creation of a group (Creating a Supportive Community) and on diabetes management strategies (The Evolution of Self-Management Strategies). Although these themes were unexpected, they were welcomed as they provided me with a more diverse understanding of the lived outdoor experiences of my participants than I would have been allowed should I have uncovered ideas related only to those already studied through literature review. These are discussed further in Chapter Four.

After each step in this data analysis process, I was left with sets of orphan text. This was text that I felt was too important to discard, but did not neatly fit within any theme or sub-theme. In total, I was left with 36 pieces of unused quotations. Although, during initial data analysis, these quotations did not fit neatly into a theme or sub-theme, during the process of reporting my data, I was able to incorporate 22 of the 26 quotations into the various overarching and sub-themes. The remaining 14 quotations that we left orphaned, or unused in this present study may exist for several reasons; however, it is likely that, as a beginning researcher, I selected quotations from the overall transcriptions that, in the early stages of research, I felt were important without truly considering what the quotations' relevance might be and thus, have ended up with unimportant quotations. Following each step in my data analysis, data were saved as a

separate word-processed document within each participant's labeled electronic document folder. Documents were labeled with the participant pseudonym and the title relevant data.

Finally, it is important to note that throughout the process of data analysis, I used the constant comparative method to loosely inform my analysis practice. As Morse and Field (1998) describe, it is important that each piece of data be compared with every other piece of relevant data. I used this method when creating my repeating ideas, repeating themes and overarching themes. I compared each piece of data within each interview and then across each interview. I found this an important step in my analysis as it allowed me to separate ideas that were important to individual participants as well as ideas that were demonstrated as important across several participants.

In addition to using Ahern's (1999) reflexive bracketing techniques to manage subjectivity, they also helped in the actual analysis of by data. Steps six and seven in Ahern's (1999) methods include identifying the areas that surprised and/or confused me. These were discussed previously in relation to my post-interview reflections. Ahern's (1999) final step involves a post analysis activity in which the final research write up is analyzed to identify instances, if any, in which certain participants' stories may have been favoured over others.

As mentioned previously, my research journal was an integral part of both my data collection and data analysis. During data analysis, the journal was used to record emerging themes, my own questions, confusions and surprises, as well as any unique or expected findings.

Many phenomenological methodologists recommend delaying all review of relevant literature until following the collection of data. I chose, however, not to delay the review of my literature and completed a full literature review as part of my thesis proposal. The practice of delaying literature review has been recommended as it may help to ensure objectivity and reduce the effect of bias (Koch, 1995). Because of my position as a beginner researcher I felt it was important for me to review relevant literature before undertaking any data collection or analysis. This review helped me become even more versed with not only the findings of various influential qualitative studies relating to the phenomenon under study, but also helped familiarize me with the qualitative research method.

Following the completion of this inductive analysis process, I engaged in a process of deductive analysis to relate my findings directly back to my research questions. I ensured that this deductive process took place only after all inductive analysis was complete in order to ensure that my emerging themes remained true to the inductive nature of phenomenological research (Moustakas, 1994).

Limitations

Several limitations to the selected research methods should be noted. These limitations relate to the researcher bias and participant reporting.

Researcher Bias

In addition to managing for subjectivity as mentioned above, I also made attempts to acknowledge additional potential research bias. Although I was not able to, nor intended to eliminate all research bias, I had hoped that the processes outlined previously for managing subjectivity allowed me to be aware of much of the bias that

did exist. It has been suggested that researcher bias may act as a limitation during qualitative study (Lichtman, 2010). Bias, however, can also serve as a powerful tool in shaping data as it is being collected (Lichtman, 2010). Instead of trying to eliminate bias from qualitative research, Merriam (2009) asserts that biases, assumptions and dispositions be thoroughly named and explained by the researcher. These explanations “allow[ed] the reader to better understand how the individual researcher might have arrived at the particular interpretation of the data” (Merriam, 2009, p. 219). My personal biases were addressed previously through the outline of my bracketing (epoche) methods (Ahern, 1999).

Participant Reporting

An additional limitation to my study relates to recollection and memory abilities of my participants. Participants were asked to recall a meaningful outdoor experience from their pasts. This may have presented a validity problem. Validity is based around the “question of how the research findings match reality” (Merriam, 2009, p. 213).

Thelen (1989) reports one strategy to avoid validity problems with relation to memory and recall is to ask participants to reconstruct the experience you wish to investigate, rather than asking them to remember the experience. By asking participants to reconstruct experience, Thelen (1989) believes that participants will use both the memory of the event as well as a sense of what they now believe is important about that event in their explanations.

Several other issues related to participant reporting and data validity are presented by Scholl (2009). Scholl reports that the main limitations to participant reporting relate to what he calls forgetting (as mentioned above), suppression,

verbalization, justification and pleasing. Suppression occurs when participants consciously or subconsciously suppress and change attitudes that they believe are less acceptable to society or undesirable to the interviewer (Scholl, 2009). Participants may also have had problems with the actual verbalization of experience (Scholl, 2009). This may have limited my research in that I asked participants to express an experience that they had with words. This may be something that the participants had never been asked to do, and as such, they may have struggled, although not observably, with the task. Justification and pleasing are similar concepts with regards to participant reporting. According to Scholl (2009), participants will often feel pressure to not only sound reasonable and intelligent in their responses, but also to provide responses that they think the researcher may want to hear. Any concerns related to participant justification or pleasing were recorded in my research journal.

Establishing Credibility

In order to increase the trustworthiness of the study findings, particularly in light of the previously outlined limitations, I needed to make certain that rigor has been applied in the carrying out of my methods.

Credibility and Transferability

Credibility and transferability in qualitative research refer to as the truthfulness of the findings (Altheide & Johnson, 1994). There are several ways that credibility is produced in qualitative research. I used triangulation and member checks in order to provide the greatest credibility for my research.

Triangulation. Triangulation is one way to ensure validity in a qualitative study. Denzin (1978) describes the following four types of triangulation: the use of

multiple methods, multiple sources of data, multiple investigators or multiple theories to confirm findings. For the purposes of my research, I used multiple methods to ensure triangulation and ultimately, validity of my study. I used the methods of research journaling, semi-structured interviews and artifact-elicitation interviews for these purposes.

Member checks. One way to promote validity in qualitative research is to conduct member checks (Merriam, 2009). Member checks occur when the researcher solicits feedback on findings from participants (Merriam, 2009). As mentioned previously, I conducted member checks by communicating my interview transcriptions to my participants via email. I also forwarded to my participants the overarching themes and sub-themes that emerged through the data analysis process of my research allowing them to comment on the accuracy of the themes in relation to their intended meaning. This allowed greater confidence in my interpretation of the interview, as confirmed by participants.

Dependability

Dependability is similar to quantitative reliability and is defined as the stability of findings in qualitative research (Altheide & Johnson, 1994) as well as the “extent to which research findings can be replicated” (Merriam, 2009, p. 220). Dependability can be problematic in qualitative research in that personal experiences of participants cannot be readily replicated. Because of this, I relied on participant reports. This became somewhat challenging as I asked participants to recall experiences from the past, and relied on participant recollection and memory; however, as Merriam (2009) recommends, to provide reliability in qualitative research, the question addressed should

be “whether the results are consistent with the data collected” (p. 221). It has been suggested that triangulation and the audit trail be used to ensure dependability in qualitative research.

Merriam (2009, p. 222) describes the process of carefully outlining how one arrives at a conclusion as the audit trail. In other words, the researcher must provide a specific explanation of each step taken to arrive at a set of results. This has been accomplished through the detailed methods section included in this document.

Ethical Considerations

Human participants were used in this study, and as such, the rights and protection of the participants were maintained throughout the course of research. Before commencing this research, approval was obtained through the Brock University Research Ethics board (file # 09-160). Participants were provided with a letter of introduction to the research and were required to sign a consent form (See Appendix C). The founder of Connected in Motion, Chloe Steepe, thoroughly encouraged and supported the use of her organization in any research study that holds the potential to contribute to the body of literature supporting outdoor experience and/diabetes education. She verbally agreed to allow myself as the researcher to post invitation posters on Connected in Motion’s social networking site in order to recruit participants.

Participant anonymity was maintained through the use of pseudonyms for each participant. This also aided in data management. Participant names and contact information were stored separately from participant data on a password protected personal external hard drive belonging to myself as well as in labeled folders stored in a locked filing cabinet in my home office. Brock University’s Research Ethic’s Board

general policy on the collection and storing data states, “researchers must respect the privacy and confidentiality of participants and their data” (Brock University Research Ethics Board, 2010). In order to demonstrate respect and communicate confidentiality to my participants, along with the participant names and contact information, all data were stored on a password protected personal external hard drive belonging to myself. In addition, participant names were not included, or in any way associated with the data collected in the study. As mentioned previously, member checks were also be undertaken. During this process, participants were encouraged to review the transcripts of their interviews and to make any corrections to the data that they felt necessary.

Restatement of Research Problem

Many challenges exist for young adults living with Type 1 diabetes; however few support programs exist to cater to the needs of this population. The development of character traits, specifically self-efficacy and autonomy, has potential to help alleviate several of the challenges faced by young adults living with Type 1 diabetes, and has been shown to develop through outdoor programming, such as those seen at the 250 summer camps existing for children and adolescents with diabetes throughout North America (Diabetes Education and Camping Association, 2009).

The aim of this study was to understand how outdoor experience influences the development of character among a group of young adults living with Type 1 diabetes, as well as to evaluate how groups such as Connected in Motion may provide these experiences. The findings from this research were used to support the development of outdoor programming for young adults with Type 1 diabetes and to help these individuals better deal with the challenges at young adults living with diabetes face on a

daily basis. In addition, the findings of this research contributed to the current body of knowledge relating to alternative diabetes management strategies, diabetes education and outdoor experience.

The following chapter presents the results of this study as collected through the described research methodology. Both direct quotations from participant transcripts as well as paraphrased material is used to present the results. Following the presentation of results, Chapter Five provides a discussion of the study's results and their implications for theory and practice.

CHAPTER FOUR: RESULTS

The following chapter presents the results of this study. Six primary themes emerged as a result of the data analysis process. The following chapter presents the participant reports that led to these themes in detail with relation to the lived experiences of the participants involved in my study. Several sub-themes emerged, which combined to form the six overarching themes: (a) The Evolution of Type 1 Diabetes Self-Management Practices; (b) Creating a Supportive Community; (c) Redefining What is Normal; (d) The Recipe for Success as a Person with Type 1 Diabetes; (e) The Promotion of Personal Growth; and (f) Language Usage. These are outlined below in Table 2. Each of these six overarching themes is presented as a primary heading within this chapter. Each theme is comprised of supporting sub-themes, which are also presented. Select quotations and paraphrases of participant responses are included to highlight each of these themes and sub-themes. The overarching themes, as well as the sub-themes, were created using the combined data from the core concept phase of each semi-structured interview as well as from the artifact-elicitation interview. In order to ensure a clear outline of the relevance and use of participant artifacts, an additional outline of the artifact elicitation interviews will be outlined following the presentation of the overarching themes and sub-themes. Following the presentation of the themes, the data will be explicitly connected to the original research questions. The research questions guiding this study will be presented as primary headings and serve as a guide for the aforementioned explicit connections.

Table 2

An Overview of Emerging Themes and Sub-themes.

Overarching Theme	Sub-theme
The Evolution of Type 1 Diabetes Self-Management Practices	Breaking Free of Negative and Dangerous Cycles
	Change in Behaviour Caused by Novel Experiences
	Creation of Powerful Feelings Promoting Change
Creating a Supportive Community	Praising Aspects of the Group
	Similarities of People Coming Together to Form the Group
	Stepping Away From an Independent Lifestyle
Redefining What is Normal	Challenging an Outsider's Perception of a Person With Type 1 Diabetes
	Feelings of Normalcy
The Recipe for Success as a Person with Type 1 Diabetes	Being Outdoors Impacted Behaviours and Feelings
	Adulthood is When We Realize the Importance of Healthy Living
	Experiences Mirrored Those of Childhood
	The Greatest Learning was Informal and Natural
The Promotion of Personal Growth	Evolving Type 1 Diabetes Self-Efficacy
	Learning About Yourself

Language Usage

Diabetic Versus Person with Diabetes
Type 1 Diabetes Control
Doing “Okay”
Diabetes Type Prefix Usage

Throughout these results, the voices of all six participants are represented through both direct quotations and paraphrased material. I took special care in ensuring that each of the participant voices is represented within each theme throughout the presentation of results. While selecting which quotations to use in support of each theme, I included the participant voices that provided the most clearly articulated examples and detailed descriptions of experiences. It should be noted, however, that care was taken to ensure that no one participant's experience was given excessive representation through the reporting of results. The six previously mentioned themes, compiled through the aforementioned processes, are presented below with select participant quotations and paraphrases. Additionally, the number of respondents' reports corresponding to each theme will be presented to provide the reader with a sense of each theme's significance.

The Evolution of Type 1 Diabetes Self-Management Practices

The first theme that emerged as a result of participant responses related to the evolution of self-management of Type 1 diabetes. The Evolution of Type 1 Diabetes Self-Management Practices theme was comprised of three distinct but related sub-themes: (a) Breaking Free of Negative and Dangerous Cycles; (b) Change in Behaviour Caused by Novel Experiences; and (c) The Creation of Powerful Feelings Promoting Change. Each of these sub-themes will subsequently be discussed in detail after a brief mention of this first major theme.

Throughout my interviews, all six participants spoke of the evolution and improvement of their Type 1 diabetes self-management practices. For example, Ashley described the major change in her thinking that occurred following her attendance at the

2010 Winter Slipstream. She explained her realization: "I think it is more like you have control and less that your diabetes has control. You don't have to follow strict guidelines for anything, like eat at a certain time or do things a certain way" (Ashley, April, 2010). Ashley went on to describe a specific change that she noticed in her Type 1 diabetes management. As an active individual, Ashley was excited to learn some new ways to test her blood sugars while running. She explained, "I used to have problems when I was out running with dropping my [blood glucose meter] and whatnot, but I learned some tricks with that" (Ashley, April, 2010). Ashley discussed how this had helped her gain better blood glucose control during physical activity and, ultimately, had allowed her to participate in more diverse forms of physical activity. This evolution in Ashley's self-management practices had, in a sense, provided her with more freedom.

Stefanie described a specific change that occurred with her Type 1 diabetes self-management following her participation in the 2009 Winter Slipstream weekend. She explained how, occasionally, she would end up with extremely high blood sugars as a result of her insulin pump site cannula becoming kinked. During the 2009 Winter Slipstream weekend, however, she learned a trick that had provided her much better management and allowed her to avoid some dangerous high blood sugar levels that often occur when an insulin pump site cannula becomes kinked. Stefanie explained,

One thing I learned is that sometime your cannula can get tugged a little bit and sometimes you don't even notice until you're really high. So using a little bit of tape to keep it down and actually taping further down the tubing is a neat trick I learned. (April, 2010)

Shondra participated in both the 2009 and 2010 Winter Slipstream weekends and, similar to Ashley and Stefanie, she found that the experiences she had had and influenced her Type 1 diabetes self-management practices. Interestingly, she explained how meeting people who were testing their blood glucose more frequently than she did and who were counting carbohydrates more carefully than she was had made her feel that she should be doing more of these things as well. Specifically, she recalled an increase in the frequency of her blood glucose testing upon returning from the Winter Slipstream weekend in 2009. Shondra explained, “It helped kind of get me back on track with some of my diabetes management” (Shondra, April, 2010).

Emily spoke of the major impact using a CGM had had on her Type 1 diabetes care and management. She had the opportunity to try out a CGM at the Winter Slipstream weekend in 2010 and the experience had such an impact on her during the short weekend, that she purchased her own CGM equipment upon her return home. Emily explained,

Well, it was like a total eureka moment—watching that little graph—watching it rise after a meal and then plummet shortly thereafter. It was like, “My goodness! My basal rates are too high! So whenever my blood sugars are on track, I know that I’m going to be low in 5 minutes.” Showing me what was going on visually was really, like, wow! (April, 2010)

Hayley had a similar experience. She spoke of the difference learning about CSII therapy had had on not only her Type 1 diabetes care, but also on her life in general. Hayley described,

I physically feel better because my blood sugars are so much better. Feeling better has made me want to treat myself better, so I try to choose good food and manage my weight and it all goes along with my new abilities to manage my pump along with the new exercise that I'm doing. (May, 2010)

Breaking Free of Negative and Dangerous Cycles

Three of the six participants involved in this study discussed the ways in which outdoor experiences they had during Connected in Motion's Winter Slipstreams allowed them to realize that they were truly capable of making change with regards to their own Type 1 diabetes management. According to participant reports, these changes involved a shift away from perceived negative or potentially damaging behaviours and towards behaviours that these participants believed to promote better Type 1 diabetes management and, ultimately, a healthier lifestyle.

Cycles and circles. Three of the six participants discussed the idea of cycles and circles during their interviews. Hayley discussed an example of a negative cycle that she had found herself caught in prior to attending the 2009 Winter Slipstream weekend.

Hayley explained:

I think [life with diabetes] can be a really vicious circle, or at least that's the way it was for me. I found that because I didn't have the best control, I was way less confident, so I didn't want to test my blood sugars as much because I knew I wasn't in great control. It was kind of like I was failing and so why should I even bother doing all of those blood sugars? (May, 2010)

Hayley discussed the negative thoughts that she would have whenever she would get a bad blood sugar reading. She explained that these negative thoughts led her to fear

testing and test much less than is recommended by healthcare professionals. Having fewer blood sugar readings led Hayley to have what she believed to be poor control and ultimately led to, in her opinion, even more disappointing blood sugars.

Emily discussed a similar idea. She discussed how she had been struggling with Type 1 diabetes ever since she was diagnosed. She recalled the following:

You go through periods when you want to try to get [your diabetes management] right and then you get frustrated and you don't want to bother trying and then you try again and you get frustrated. What I was doing obviously wasn't working, so I thought I was going to have to try something different. (Emily, April, 2010)

Emily went on to describe how she had decided to get involved with Connected in Motion's Winter Slipstream weekend of 2010 in the hopes that this new experience might, over time, spark a change in this negative cycle of frustration she often fell in to.

Although only three of the participants discussed their frustrations with relation to cycles and circles, it was evident that frustration was present at some point in each of the participants' lives as individuals with Type 1 diabetes.

Self-management of Type 1 diabetes. Discussion centred around change in the belief that an individual can manage Type 1 diabetes on her own—a change that occurred after attending Connected in Motion's Winter Slipstream weekend. Four of the six participants discussed the necessity for change and the birth of the realization that change was something that individuals could catalyze in their own lives. These individuals discussed the experiences of coming to the realization that change was something that was not only necessary but also something that was within each woman's

reach.

After describing the frustrations she had felt ever since she was diagnosed with Type 1 diabetes, Emily discussed how she came to make her own change:

I thought that if I actually met other people who were diabetic that they might have some insights or just—something. I might learn something from them or learn that it is possible to get it right most of the time. (April, 2010)

Emily reported how when she began to actively seek out other people who were living with Type 1 diabetes, she came across Connected in Motion's Winter Slipstream weekend. She attended in 2010.

Hayley discussed how, prior to her experiences with Connected in Motion, she had relied on her endocrinologist when it came to making changes to her Type 1 diabetes care. She did not know anyone else who could offer her Type 1 diabetes advice or whom she could bounce her own ideas off of. Hayley described the changes that had happened since attending her first Winter Slipstream weekend in 2009:

I know I can just pick up the phone and say "I have a question for you! What do you think? What do you think my adjustment should be? Do you think this is a good idea? Could you help me?" That has been a huge learning experience for me. (May, 2010)

Although Hayley had been admittedly frustrated with her Type 1 diabetes management and had often fallen into the vicious cycles discussed previously, her outlook her Type 1 diabetes self-management had changed. She spoke of the changes she had made: "I do multiple blood sugars a day now because I know I don't have to be afraid of what [my blood glucose meter] is going to tell me" (Hayley, May, 2010).

Britney also mentioned that she noticed measurable change in her Type 1 diabetes management and control since being involved with Connected in Motion's Winter Slipstream in 2010. The changes she had made on her own allowed an increase in her Type 1 diabetes management as measured by the marked decrease in her A1C in the months since attending her first Winter Slipstream, according to her report.

Change in Behaviour Caused by Novel Experiences

The second emerging sub-theme related to the idea that individual changes were caused by novel experiences. Five of the six participants detailed the reasons why they believed change had occurred. Getting together with a group of other individuals who were living with Type 1 diabetes was something that four of the six participants found to be a relatively novel experience. The remaining two individuals, having worked at a summer camp for children with Type 1 diabetes until 2008, were quite comfortable in the presence of other individuals with Type 1 diabetes; however, the idea of using the gatherings for experiential Type 1 diabetes education was a truly novel concept for all individuals involved in this research. Five of the six participants reported how the experiences of Connected in Motion's Winter Slipstream weekends had motivated them to try new activities.

Shondra discussed how she was excited at how comfortable she had become participating with many different groups of friends in outdoor activities. This comfort was fostered, she explained, by the support she was shown and the practice she was given through Connected in Motion events. Shondra recalled:

I've tried so many activities first with Connected in Motion—like rock climbing and whatnot—and I am now able to do those activities with other friends and

with other groups with a bit more confidence that I might have otherwise had.

(April, 2010)

Shondra's above description related her participation in Connected in Motion's outdoor activities, specifically rock climbing, directly to an increase in self-confidence and ultimately to an increase in Type 1 diabetes self-efficacy. Although the rock climbing activity that Shondra was referring to did not occur at the Winter Slipstream weekends (instead it occurred as a single day event held in Toronto in May of 2009), the described community environment was very similar to that of Winter Slipstream.

Shondra was not the only individual who reported feeling more confident in trying new things after attending a Connected in Motion event. Emily reported that participating in the Winter Slipstream weekend in 2010 gave her more courage to go outside and try out new physical activities—something with which she was not entirely comfortable with prior to attending Winter Slipstream. Similarly, Britney reported that when she attended the Winter Slipstream weekend in 2010 she met people who were doing many different types of physical activities—people who made participating in those activities look easy. This made her push herself to get to a level where she could be comfortable doing these activities as well. Britney recalled:

[There were] things that I wanted to try but that I had been too embarrassed to try. By hearing from people who had done the runs and gone out climbing and gone snowboarding made me realize that if I had a group of people to go out there with, I could do it too. (May, 2010)

Finally, Stefanie reported that she had felt a positive and supportive attitude from everyone at Winter Slipstream. According to her report, this attitude created for Stefanie

a very unique environment, which pushed her to become involved in things that she had never tried before.

Not only did the novel experiences presented through the Winter Slipstream weekends encourage five of the six individuals to participate in new physical activities, four of the six participants also reported feeling encouraged to improve their Type 1 diabetes management. These participants reported that the experiences they had with Connected in Motion caused change in terms of Type 1 diabetes management and healthy living practices.

Britney saw measurable increases in her Type 1 diabetes management as represented by a significantly lower A1C in the months following her participation in Winter Slipstream 2010. She referred to these increases as an improved level of Type 1 diabetes control and attributed her newfound success to many of the people she had met at Winter Slipstream in 2010. She also attributed this positive change to the various new Type 1 diabetes management techniques that she had picked up throughout the Winter Slipstream weekend. Not only did she describe a measurable change in her own Type 1 diabetes management, but she also discussed how she believed that, regardless of whether or not the Winter Slipstream experience was one that would directly influence her character or the character of the other participants, it would surely encourage people to take better care of themselves and push them towards what she called tighter Type 1 diabetes control.

Winter Slipstream drove Hayley to take better care of her Type 1 diabetes, she explained. Hayley related her Type 1 diabetes management abilities directly to her experiences in the outdoors. She compared what she referred to as her “diabetes

maturity” (Hayley, May, 2010) to that of other individuals with Type 1 diabetes who had never been involved in outdoor pursuits. She discussed how the experiences she has had seem to have made her more attuned to her own care. She “knows [her diabetes] is serious and [knows] that [she] has to stay on top of it” (Hayley, May, 2010).

Finally, Shondra recalled how she had been feeling lost in terms of Type 1 diabetes management before coming out to the 2010 Winter Slipstream weekend. She had just begun a new job and had moved to a new community. She discussed how the stresses of these changes had caused her Type 1 diabetes management to suffer, but went on to explain that her experiences at the 2010 Winter Slipstream event seemed to allow her to regain the management that she had been missing.

Creation of Powerful Feelings Promoting Change

The final sub-theme comprising the overarching theme of The Evolution of Self-Management Practices was related to the creation of powerful feelings that promoted change. Participants discussed how feelings could promote change not only in a physical sense, but also in terms of Type 1 diabetes management.

Gaining confidence. First, participants discussed the ways in which their participation in Winter Slipstream helped them to gain confidence. Hayley and Ashley both discussed how feelings of confidence could push a person to do more and to be more. Since being involved in outdoor pursuits, Hayley explained that her confidence had grown and that, ultimately, she had become a more independent individual. Although not directly related to outdoor experiences with Connected in Motion, Hayley recalled her childhood camping experience and how these experiences had shaped her character:

I feel that if I hadn't had those experiences and I hadn't met those people and gone to camp, I feel like I would have a lot less confidence in my lifestyle today. I feel like I'd be more sheltered and would be more nervous to try to do new things. (May, 2010)

Ultimately, Hayley conveyed that it was her increased confidence that pushed her to try new things. These new things related to both Type 1 diabetes management (e.g., trying out pump therapy) and physical activity (e.g., running a half marathon).

Ashley explained, "Once you have the confidence to go out there, you aren't held back by anything" (April, 2010). She discussed how her confidence grew after attending the Winter Slipstream weekend in 2010 and how she became inclined to actively seek out opportunities to be involved in more physically demanding activities—the type of activities that she had once been nervous of participating in.

Striving to do better. Three participants discussed the feeling of being pushed. Hayley, Emily and Britney discussed how they were pushed to make change in their lives because of their experiences at Connected in Motion's Winter Slipstream weekends. Hayley discussed how she felt encouraged to set new physical goals, specifically related to running, after her experiences at Winter Slipstream 2009 and 2010. She recalled: "There are tons of people who are part of Connected in Motion who are pushing themselves and improving physically every day and that is what is so good. It's pushing my limits" (Hayley, May, 2010). Interestingly, hearing about the experiences of some of the more athletically accomplished individuals who attended Winter Slipstream did not push Hayley. She explained: "The people who pushed me to do more were those people who weren't doing anything amazing with physical activity.

Seeing that, it makes me want to be better and it makes me—it inspires me, basically” (Hayley, May, 2010).

Emily discussed how the new experiences she had at the 2010 Winter Slipstream weekend had pushed her to get out and be involved in what she called “more well-rounded outdoor physical activity” (April, 2010). Leading up to her first Winter Slipstream experience, most of her outdoor activity came from riding her horse at her barn and through occasional lunch hour jogs at her place of work. Following her experience at the 2010 Winter Slipstream, Emily explained that she had felt pushed to try out new activities.

Feeling satisfaction and accomplishment. Not only did individuals discuss the powerful feeling of confidence and of being pushed in a positive direction, but also two participants repeatedly discussed feelings of satisfaction and accomplishment following their experiences in the outdoors. Shondra specifically related her feelings of satisfaction and accomplishment to outdoor experiences she had had as an adolescent. She recalled heading out on her very first canoe trip. This canoe trip happened only months after she was diagnosed with Type 1 diabetes. She recalled thinking, before pushing out into the lake in her canoe, that this was something she never thought that she would be able to do, let alone do with Type 1 diabetes. She recalled:

I just have memories of sitting around the fire after a long day of canoeing and hiking and cooking our own food and just feeling really fulfilled and having a really good sleep knowing that you did a really good job that day. I just remember, on that trip, a sense of satisfaction and accomplishment. (Shondra, April, 2010)

Shondra continued to be involved in outdoor adventures throughout her young adult years. Shondra recalled: “It confirms that I feel that I know what I’m doing and I like the balance I strike when I’m in these situations” (April, 2010). When questioned further about these feelings Shondra reiterated how the feelings of accomplishment and satisfaction were not only for the ways she had physically pushed her body, but the ways in which she had pushed her thinking and her own Type 1 diabetes management in new situations.

Hayley discussed two of her proudest moments as an individual with Type 1 diabetes. Her first proud moment occurred when she was still a child. She recalled completing several swimming levels during one of her stays at a summer camp for children with Type 1 diabetes. This was surely an accomplishment to be proud of, as she was the first individual her age ever to achieve such high levels in swimming. The day before she was to head home from summer camp, Hayley received a single black feather as a reward for her accomplishment. It was moving to hear Hayley discuss how this was her “first proud moment as a diabetic” (May, 2010). She discussed how it was the first time she realized that Type 1 diabetes would never hold her back from reaching her goals.

Hayley recalled having the same feelings of accomplishment during her first experience at Connected in Motion’s Winter Slipstream weekend in 2009. Although not afraid of heights, Hayley felt incredibly challenged when participating in a team building high ropes initiative during the weekend according to her report. She recalled feeling anxious, nervous and visibly frightened during the activities but immediately felt safe after hearing the shouts of encouragement coming from her newfound friends—people

she had only met a matter of hours earlier, and yet people whom she felt an immediate trust for. Hayley completed the challenge. When asked why she pushed herself so far, Hayley replied: “I had to prove to everyone that I wasn’t a chicken. But I was so very proud of myself when I got down, so I was very happy I did it” (May, 2010).

Developing courage. Finally, Emily, Stefanie and Britney spoke of outdoor experience giving them courage. Each participant spoke of the experiences at the Winter Slipstream weekends as being ones that gave them courage, which acted as a catalyst to so many changes that have been previously discussed, including trying new things, pushing individuals further and optimizing Type 1 diabetes care. Emily spoke of meeting people who would “go out and do [outdoor activities] and [were not] scared to do it. Being diabetic [wasn’t] holding them back” (April, 2010). This gave her the courage to go out and try the new things that she had been hesitant about trying before. Specifically, Emily discussed how she would “like to start to try to go further and go out for longer and not be scared that [she was] going to pass out somewhere” (April, 2010) with relation to running.

Creating a Supportive Community

The second theme that emerged from the data was that of Creating a Supportive Community. Three sub-themes also emerged relating to the theme of community. Following a brief introduction to the overarching theme Creating a Supportive Community, the three sub-themes: (a) Praising Aspects of the Group; (b) Similarities of People Coming Together to Form the Group; and (c) Stepping Away From an Independent Lifestyle will be presented.

Each of the participants involved in this study discussed the ways that the Winter Slipstream weekends had fostered a sense of community. Shondra explained how she felt a sense of community immediately upon commencement of the 2009 Winter Slipstream weekend. She recalled, "I remember when I first walked in. I felt a sort of community already. It was a very comfortable situation" (Shondra, April, 2010). Shondra went on to describe the community as "a group of people that recognized that there is strength in numbers and that they can benefit from directly interacting with other people with Type 1" (April, 2010). Britney reiterated this idea and added that she believed that the group of people motivated her in ways she had never experienced before. Several times Britney used the term "outgoing" to describe this new community.

Hayley described the community as being very open minded. She explained, I think the thing that everyone really has in common there is the fact that they want to meet new people and to learn from them and to share their experiences. Maybe not even necessarily sharing their experiences but just willing and wanting to learn from other people. I think it is a very open-minded group. I think, you know, a lot of people go there not knowing anyone. So I think just an open-minded group of young adults looking to learn something new about diabetes. (Hayley, May, 2010)

Stefanie provided a very detailed report of the group. She described the many ways that the group had influenced her both during the Winter Slipstream weekends as well as during the time in between Connected in Motion events. She explained the feelings she had when the community surrounded her at the Winter Slipstream weekends.

I could step out of the box and I knew that there would be people there to support me. There was a whole crew of people wearing that same green t-shirt and I could, at any point, turn to any one of them and ask them for help and I knew that it would be there. (Stefanie, April, 2010)

It should be noted that Connected in Motion provided green logo t-shirts to all participants in 2009. In 2010 participants were provided the opportunity to purchase both green t-shirts and green hooded sweatshirts. Each participant at the Winter Slipstream weekend had some form of green logo shirt to wear. For Stefanie, this act brought the community together even more than the commonality of Type 1 diabetes had.

Praising Aspects of the Group

Time and time again, when participants were asked to describe their outdoor experiences, the focus of their descriptions was on the positive aspects of the group involved in the experience. Overall, participants praised the idea of a non-judgmental group in general and in terms of Type 1 diabetes management; the feeling of community that emerged; and the inviting atmosphere present during the Winter Slipstream weekends.

A lack of judgment. Three of the six participants discussed their feelings in relation to a lack of expressed judgment from peers when it came to Type 1 diabetes care. One participant, Stefanie, discussed how she was nervous at how she may be judged during meal times. She recalled initially feeling worried to make what might be judged as a bad food choice. She recalled how the availability and abundance of healthy choice items during meal times made her feel that the norm for this group was very

controlled, healthy eating. She explained that she had felt, perhaps, she would be judged if she were to take a larger portion size than her peers but quickly came to realize that these new friends would support her and that in moderation, there really was no such thing as a bad choice. She recalled:

As much as I felt pressured to make good choices, I felt like I wasn't being judged for making bad ones. [When I'm with this group] I really don't feel like I am being judged in the way that someone who doesn't really understand Type 1 would judge me. When you are out with [other non-diabetic friends] you might have one piece of cake and they are like: "Should you eat that?" (Stefanie, April, 2010)

Stefanie elaborated by explaining how, sometimes, it was uncomfortable to have to explain that even though a person may have Type 1 diabetes, it does not mean that a certain food is any worse than another food as was, perhaps, once the case for individuals living with Type 1 diabetes. This is discussed further in Chapter Five.

Stefanie praised the group of her peers that attended the Winter Slipstream weekends: "There is a level of understanding that I feel I have in the group" (April, 2010). Stefanie was asked why she felt so differently around these people when compared to her school or work peers. After considering this question, Stefanie replied: "You know what they are going through and they know what you are going through and there is no judgment passed about it" (April, 2010).

Shondra expressed similar feelings. She recalled getting "a lot of support just from being around other people with diabetes" (Shondra, April, 2010) while Hayley discussed the open-mindedness of the group. When asked if she could create a

description of the group, Hayley painted them as “an open-minded group of young adults, excited to learn something new about life with diabetes” (May, 2010).

An overwhelming sense of community. The second idea that emerged related to an overwhelming sense of community. Stefanie, Shondra and Hayley best described this concept. Shondra recalled her initial feelings when she walked into the 2009 Winter Slipstream weekend: “Everyone really, immediately, seemed to get along really well and started sharing things that you would normally think people wouldn’t share after just meeting each other but that was just the nature of the experience” (April, 2010). She reported thinking: “These people, we were part of something really special and something that was really going to take off and it was wonderful” (Shondra, April, 2010).

Shondra described the community atmosphere as being inclusive while Stefanie used the term supportive. Hayley described it as being a place for sharing. All three of these participants had been involved in the Winter Slipstreams of both 2009 and 2010. When asked if her feelings changed from one year’s Winter Slipstream to the next, Shondra replied by saying that she felt the exact same feeling of community when she walked through the doors in 2010 as she had initially in 2009. She described this as “a feeling like no other” (Shondra, April, 2010).

Feelings of inclusiveness. Five of the six participants interviewed described one of the most memorable feelings of their experiences during the Winter Slipstream weekends as being the feeling that they could participate and be successful, regardless of their abilities. They described this as a feeling fostered by the supportive nature of the group. The participants were very admiring of this group characteristic, according to

their reports. Stefanie recalled trying cross-country skiing for the first time. She described how, coming into the 2009 Winter Slipstream weekend, she had felt nervous because cross-country skiing was something that she had never tried before, yet something that was scheduled as an optional group activity. One of her greatest memories was being able to try things that were outside of her comfort zone. She recalled: “I wasn’t good at it, but I did it! Basically everything, regardless of your ability, you were able to participate in” (Stefanie, April, 2010).

Previously, one of Hayley’s proudest moments was discussed as being when she completed a high ropes challenge, despite her growing anxiety and fear for the task. When asked if she had felt pressured by the group to complete the task she replied: “I didn’t feel pressured at all. You could totally choose to do whatever you’d like” (Hayley, May, 2010). This was an idea reiterated by Emily: “[Everyone] seemed to have the same sort of mindset: It didn’t matter if you weren’t good at something—you could still do it” (April, 2010).

Similarities of People Coming Together to Form the Group

The participants in this study not only praised various aspects of the group but also discussed the similarities between people in attendance. Participants spoke of their experiences meeting new people, of the types of people they met and also of the appreciation that everyone in the group was doing okay.

Meeting new people. Participants spoke of wanting to meet new people. They explained that even more important than the actual activities that were taking place at the Winter Slipstream weekends were the relationships that were being built. Over and over again, throughout many of the interviews, the group experience was discussed. One of

the most prominent similarities among the participant responses was the desire to meet new people. Britney discussed that the simple action of meeting new people could have been the catalyst for all of the change she had seen in her own Type 1 diabetes management. She went on to explain, “I feel like now, meeting new people every day through Connected in Motion is going to be a factor in who I am becoming and who I will be” (Britney, May, 2010). When asked to give a specific example, Britney discussed how each new person she had met inspired her in a different way to do and be more as a person with Type 1 diabetes. For example, after attending the 2010 Winter Slipstream weekend, Britney came home and began to re-evaluate her career goals. She had always been interested in education but was now newly inspired to seek out potential employment in the field of Type 1 diabetes and health education—something that she had not considered before.

Stefanie also discussed the importance of meeting new people. To her, it was important to meet people who “deal with the same sort of issues day in and day” (Stefanie, April, 2010). She described how this set the tone for the entire weekend. Meeting new people and feeling that these people understood her in a way that other people without Type 1 diabetes may not be able to, was a very powerful aspect of the weekend, explained Stefanie.

Hayley, who had attended both the 2009 and 2010 Winter Slipstream weekends, felt that she had been fairly reserved and quiet during the 2009 event. Although she recalled that she had met some amazing people and developed some powerful relationships, she also described how she had held back. Hayley went into the 2010 weekend with a different outlook: “I decided just to throw myself in there and meet more

people and keep the relationships going with the people that I had met the first year” (May, 2010). Not only was it important for Hayley to meet new people, but also it was also important for her to continue to foster relationships with the people with whom she was already acquainted.

Fostering companionship. Another idea that emerged related to what some participants referred to as “outdoor companions.” Four of the six participants discussed the group of friends that they considered outdoor companions and the ways that these relationships had evolved following their involvement with the Winter Slipstream weekends. Three of the participants who had been involved with organized camping in the past discussed how their outdoor companions were almost always made up of friends who they had camped with—in most cases, other individuals living with Type 1 diabetes.

When Ashley was asked to describe the type of people that she usually participated in outdoor activities with, she recalled being involved with family and university friends in the past. Since becoming involved with Connected in motion, however, Ashley found that more and more she was looking to her friends with Type 1 diabetes to be her outdoor companions. The Connected in Motion website and facebook page became the first place she was looking when she was interested in going out and being active outdoors with a group of people.

Similar age demographic. It was discussed that spending time with individuals who were around the same age as the participants was important in ensuring a successful experience. Hayley reported that being with people her own age was an important aspect of the group that was brought together by the Winter Slipstream weekends. When

Hayley was younger she had experienced summer camp for children with Type 1 diabetes, but the Winter Slipstream weekend was the first time since those camp experiences that she had been able to get together with people with Type 1 diabetes who were her own age. Hayley explained,

It's easier with someone you can talk to who is already on the pump and someone your own age and someone who has the same lifestyles as you. The outdoor experience mixed with being a Type 1 diabetic and mixing with people my age with Type 1 diabetes allowed me to really open up and to really become confident with what I was doing. (May, 2010)

The importance Hayley placed on being with people her own age was shared by three other participants, including Emily.

Emily explained that she believed the experience that the 2010 Winter Slipstream weekend had provided was best suited for an older—that being older than adolescent—audience. Emily stated,

I think Connected in Motion is better for an older age group because there is nothing for [young adults] and kids get to go to camp and they get to do all of that fun stuff, but I never did anything like that when I was a kid. (April, 2010)

Emily went on to discuss how she had once attended a support group at her local diabetes clinic—one aimed at adults with diabetes. She found herself surrounded by a group of elderly patients with Type 2 diabetes—people who she said she felt she shared nothing in common with and could not learn from or share experiences with. Although Emily's tone of voice and body language hinted at, perhaps, an envious attitude towards youth with Type 1 diabetes—with relation to the number of opportunities available for

them to get together with each other, share and learn—her want and, perhaps, need for an outlet comprised of other young adults seemed highly warranted when paired with her peers' responses.

Britney took on, yet, a different view. As a former camper and staff member at a camp for children with Type 1 diabetes, Britney reported having fostered many relationships with other people with Type 1 diabetes as she was growing up. Her experiences at Winter Slipstream, however, allowed her, for the first time in many years to develop new relationships with other people with Type 1 diabetes. She was excited at the potential this held for the future. Britney told me: "I believe that, again, with Connected in Motion, I will get to try many new activities in my life and meet many new people with diabetes, as I get older" (May, 2010).

Similar health status. Another resonant for all participants, according to their reports, was that the people in the group were all doing okay. It was very interesting that several participants used this phrase to describe the health and well being of individuals in the group. Emily described the experience as profound:

It was profound just sitting around with a bunch of other diabetic people who are doing okay and have similar interests that I have. I was smiling for like weeks after I left. I couldn't wipe it off of my face for weeks after. (April, 2010)

Although the phrase doing okay could refer to many different aspects of an individual, I came to understand that what Emily was referring to was the overall health of the individuals with Type 1 diabetes.

Stepping Away From an Independent Lifestyle

The final sub-theme supporting Creating a Supportive Community related to participant descriptions of the feeling of stepping away from an independent lifestyle. That was not to say that participants did not leave the weekends as more autonomous individuals; however, while at the weekend, participants praised the fact that they did not need to be independent in this environment—that they could lean on one another for support—something that many of them did not have the luxury of while living at home. Specifically, participants discussed how they had always felt independent, and how Type 1 diabetes, perhaps, had accelerated the claiming of their independence.

Pre-existing independence and autonomy. All six of the participants in this study discussed feeling that they had come into the Winter Slipstream weekends as very independent, autonomous individuals. Shondra discussed how she had always been very independent and how she felt that independence was, perhaps, a family trait of sorts. She believed that her independence was shown at an early age through her Type 1 diabetes management—something for which she had always claimed responsibility. Stefanie also explained that she believed that her independence and sometimes even her confidence were shown through her Type 1 diabetes management. Her Type 1 diabetes was something that she had “always handled on her own” (Stefanie, April, 2010). Emily also believed that she was a very independent individual. Interestingly, she was grateful for the Winter Slipstream weekend because for her it was not “about being more independent—it was about asking questions instead of trying to do it all on [her] own all the time.”

Accelerated claiming of independence. It was also suggested that living with Type 1 diabetes might have accelerated the claiming of one's independence.

Participants were asked whether they believed that they would have felt more or less autonomous in their lifestyles had they not been diagnosed with diabetes. Shondra's response echoed the answers of other participants: "I think if I hadn't had diabetes, I would have been somewhat independent, but I think that my having diabetes kind of accelerated my claiming of my independence" (April, 2010).

Redefining What is Normal

The third theme that emerged through this research was the concept of redefining what is considered normal. Within this overarching theme two related sub-themes emerged: Challenging an Outsider's Perception of a Person with Type 1 Diabetes and Feelings of Normalcy. These sub-themes will be outlined following a brief description of the overarching theme Redefining What is Normal.

The theme of Redefining What is Normal emerged as participants compared themselves and their actions to both the other participants at the Winter Slipstream weekends and to their peers without diabetes. Hayley spoke of her appreciation for being around individuals her age. She described how she appreciated realizing that it was normal for individuals her age to still love the camping experience. She explained, "It was really great because I got to have the camping experience that I had had when I was younger but now was able to do it with others that were my age category so that was really awesome" (Hayley, May, 2010). Stefanie also spoke of her realization that participating in outdoor adventure activities was common for individuals with Type 1 diabetes. She spoke of realizing that she was no different from her peers without Type 1

diabetes when it came to her ability to participate in these adventure activities. Stefanie described her experiences that led to her decision to try white water rafting:

There were just so many things that could go wrong, but I felt like so many other people have done so many other even crazier and wilder things that going in a raft for the afternoon is not the biggest challenge. (April, 2010)

Stefanie described feeling that if white water rafting could be a normal activity for other people with Type 1 diabetes, it could also be normal for her. She went on to describe her thoughts.

It was just nice to know that what you do is normal to other people when you're like, "Oh yah I put my pump in my mouth too!" or "Oh yah! I lick my finger when it's bloody in public!" Whatever! (Stefanie, April, 2010)

Shondra also described feeling that what she was doing was normal when compared with her peers with diabetes. More specifically, Shondra discussed how her experiences at the 2010 Winter Slipstream weekend had helped her to feel that certain life decisions she had made were normal when compared with life choices her peers had made. She explained,

I think it just, again, it was great hearing other people's stories and it helped to confirm some of the choices I had made in the past year with regards to my job and moving and that sort of stuff. (Shondra, April, 2010)

Several participants spoke of their experiences at Winter Slipstream sparking the desire to be normal. Emily described her experiences at meal times. She explained,

I usually eat a lot so I was looking around at what other people were eating and I was like, I think I'm eating way too much! And it made me feel like, wow, maybe I should be eating a little less. (Emily, April, 2010)

Although she admitted that she did not feel judged by her peers for decisions she was making regarding food choices, she did express the need to fit in with her peers. Britney had a similar experience. Upon attending the 2010 Winter Slipstream weekend, Britney was one of only two participants using MDI therapy instead of using an insulin pump to manage her diabetes. Britney explained, "At Slipstream, there were only two injectors and the one other injector told me, straight up, she was like I'm getting a pump in a month, and she got it" (May, 2010). In the time between the 2010 Winter Slipstream weekend in late January and our scheduled interview in early March 2010, Britney arranged with her Type 1 diabetes team to begin CSII therapy. She explained that although she did not feel pressured into using an insulin pump, she did feel that because insulin pump therapy was the norm among her peers, and because the advancements in the technology were consistently progressing, that it was the best decision for her. At the time of our interview, Britney had been through pump training sessions and was waiting one final appointment with her healthcare team before beginning on a pump. Britney described her excitement for continuing the therapy that so many of her peers had been using for years. Britney, had, for a short time during her adolescence, tried CSII therapy but had switched back to MDI for personal reasons. Overall, the ideas discussed by participants represented sub-themes related to challenging an outsider's perception of a person with Type 1 diabetes and feelings of normalcy.

Challenging an Outsider's Perception of a Person With Type 1 Diabetes

One step that four of the six participants expressed as being necessary in terms of redefining what is normal, was the act of challenging an outsider's perception of a person with Type 1 diabetes. The definition of an outsider was different among participants and ranged from friends without diabetes, to family members, to healthcare professionals, to co-workers. The image of a person with Type 1 diabetes being challenged in order to create positive change was an idea that was deemed important by four of the six participants.

Diabetes is not like a textbook. Ashley explained, "diabetes isn't like a textbook, as many doctors seem to think" (April, 2010). This represented the concept of patient frustration with healthcare teams—a concept that was echoed in four participant interviews. Participants demonstrated feelings of frustration and anxiety when discussing the ways in which healthcare professionals—specifically endocrinologists and Type 1 diabetes nurses—viewed them as people with Type 1 diabetes. Ashley's comments conveyed the idea that many doctors believe that Type 1 diabetes can be controlled in a step-by-step fashion and insist that a so-called textbook answer will fix any problem that may arise.

It was important to four of the six participants that Type 1 diabetes care be supplemented with real life experience—ideas that came from people who had lived through the experiences, according to their reports. Hayley recalled what it was like when she was living without the support she gained through meeting people at the 2009 Winter Slipstream weekend:

It was tricky for me because I was basically on my own. I mean there was a nurse that I could call if I needed to. But it's tricky! It's easier with someone you can talk to who is already on the pump and someone your own age and someone who has the same lifestyles as you. (May, 2010)

She went on to describe further: "I know there are nurses and doctors and everything, but it is easier to talk to a diabetic and see what they do and how I can make the changes to improve my own diabetes management" (Hayley, May, 2010).

Hayley and Ashley seemed to be expressing that there was a need to redefine what was considered normal and what was accepted in terms of Type 1 diabetes healthcare. They described wanting a more human and lived approach from healthcare professionals—perhaps one that functioned from a network of individuals learning from one another—learning more experientially than had traditionally been accepted.

The general public's view of Type 1 diabetes. The idea of redefining what is considered normal was discussed by participants not only in terms of healthcare but also in terms of the perception of a person with Type 1 diabetes in the eyes of the public. Interestingly, participants discussed how they felt more comfortable openly discussing Type 1 diabetes in public following participation in the Winter Slipstream weekends. Several participants discussed feeling hesitant when it came to treating their Type 1 diabetes in public, or to talking about Type 1 diabetes with strangers prior to attending Winter Slipstream. Stefanie recalled how her comfort level increased following her participation at the 2009 Winter Slipstream weekend: "It just has given me a lot more confidence to openly whip out my pump in public" (April, 2010). Stefanie discussed how prior to attending the weekend she had felt uncomfortable testing her blood sugars

in a restaurant or pulling out her pump to bolus in front of friends. Since her participation at Winter Slipstream, she realized that instead of feeling embarrassed she should use these experiences as opportunities to provide education—she could use these experiences to educate her family, friends and co-workers about what Type 1 diabetes was, or perhaps more importantly what Type 1 diabetes was not.

Shondra brought up yet another view related to feelings of normalcy. She discussed how her participation in the Winter Slipstream weekends had confirmed that the ways she was managing her Type 1 diabetes were normal. Many of the management strategies she used were similar to those her peers used. Shondra speculated about how the experiences during the Winter Slipstream weekends may have also affected other participants: “I think for some people, [the weekends] had a really strong impact on them and on how they viewed themselves as a person with diabetes and how they viewed their life choices” (April, 2010). Shondra related this to her own experiences. Having recently moved away from her family home and beginning a new job, Shondra had felt somewhat insecure with relation to her life choices. She reported feeling that her Type 1 diabetes management was suffering because of the added stress of her life decisions. After attending the Winter Slipstream weekend in 2010, however, she had a renewed appreciation for her choices and realized that other people were or had been dealing with very similar challenges.

Feelings of Normalcy

A second sub-theme relating to the theme of Redefining What is Normal related to feelings of normalcy. This differs from the previous sub-theme in that it relates to feelings about oneself instead of an outsider’s view of an individual with diabetes. This

theme was captured through ideas related to living life just like any person without Type 1 diabetes and through four of the six participants' descriptions of feelings about being surrounded by other individuals with diabetes.

In-group normalcy. Only one participant expressed the following idea but it was repeated many times throughout her interview and as such, I felt it was necessary to include in these results. Ashley expressed how she had felt normal in the group at the Winter Slipstream 2010, something that she often did not feel when participating in activities with her friends without diabetes. She felt that she no longer had the worries that she had when she was participating in an individual activity such as trail running or when participating with other groups. Ashley tied this idea to the support that she felt with the Connected in Motion Winter Slipstream group. She told me that she imagined those were the feelings that a person without Type 1 diabetes may have when participating in physical activity. With relation to the new skills and new ideas she learned at the Winter Slipstream weekend, Ashley explained that she believed: "You are more able to go out and live your life just like any non-diabetic" (April, 2010). Ashley described the group of people she met at the Winter Slipstream weekend as: "let's go have some fun, forget about the whole diabetes thing even though you're not' type people" (April, 2010).

In-group similarities. Ashley, Shondra and Stefanie all expressed appreciation for the in-group similarities among individuals at the Winter Slipstream weekends.

Ashley told me:

It was great not being the only person having to test my blood sugar...or taking a quick break for some juice or Dex and not having to worry so much about doing the “time-out, I need to get juice” type things. (April, 2010)

At Winter Slipstream, it was normal for Ashley to test her blood sugars multiple times. It was normal for her to step aside to treat a low blood sugar.

Stefanie reiterated this point in her own words: “It was just nice to know that what you do is normal to other people” (April, 2010). When asked what things she was speaking of specifically, she pointed out activities such as treating a low blood sugar, dealing with a high blood sugar, counting carbohydrates during meal times and testing blood sugars. Stefanie went further to suggest: “Seeing that that is the norm for everyone else gave me the confidence to just go out there and do it myself” (April, 2010).

The Recipe for Success as a Person with Type 1 Diabetes

The theme The Recipe for Success as a Person with Type 1 Diabetes emerged through participants’ responses as reported below. These responses are based on what each individual reported about the Winter Slipstream weekends’ successes. Four sub-themes also emerged: (a) Being Outdoors Impacted Behaviours and Feelings; (b) Adulthood is When We Realize the Importance of Healthy Living; (c) Experiences Mirrored Those of Childhood; and (d) The Greatest Learning was Informal and Natural. These sub-themes will be reported in detail following a brief outline of the overarching theme: The Recipe for Success as a Person with Type 1 Diabetes.

Several factors influenced the positive experience for participants and contributed to the overarching theme The Recipe for Success as a Person with Type 1

Diabetes. These factors ranged from controllable variables such as the activity choices, to uncontrollable variables, including the weather. Words and phrases such as “choice”, “nonjudgmental”, “no pressure”, “variety of activities” and “unique opportunity” were used to describe the successful experiences participants had at the Winter Slipstream weekends.

Hayley discussed the atmosphere that evolved throughout the weekend. She described the people she met, the places she visited and the activities in which she took part. Her descriptions were vivid and seemed to paint a picture of the atmosphere at Winter Slipstream. She explained, “we kind of camped out in these great cabins and sat by the fire and chatted and got to know people” (Hayley, May, 2010).

Shondra described her experiences at Winter Slipstream by relating them to a similar experience she had had as a teenager. Shondra described a canoe trip she had been on with a group of other teens and young adults with Type 1 diabetes. She explained,

I just have memories of sitting around the fire and after a long day of canoeing and hiking and cooking our own food and just feeling really fulfilled and having really good sleeps knowing that you did a really good job that day. I guess that's how I knew that I wanted to be outdoors and that I wanted to have more of those experiences. (Shondra, April, 2010)

Shondra explained that, although she had had many successful experiences that did not focus around outdoor activity, her experiences in the outdoors were the ones that produced the most vivid and unforgettable memories. She described her expectations

that the Winter Slipstream weekends would produce memories with, perhaps, more impact on her life than the experiences she previously described.

Shondra elaborated on the role that the outdoor activity played in ensuring the experience was successful. She explained, “I got to do lots of outdoor stuff like snowshoeing and cross country skiing and the weather was perfect” (Shondra, April, 2010). Stefanie was fairly new to outdoor activities such as snowshoeing and cross-country skiing, but, as she explained, that did not stop her from enjoying her time at Winter Slipstream: “I think it is part of the attitude at Slipstream. You don’t have to be the best at it. We are all here to support each other” (April, 2010).

Britney described the benefit of the Winter Slipstream programming for young adults. She felt that the experiences fostered at the weekend, in combination with the unique needs and desires of young adults with Type 1 diabetes, made the experience a success. She described,

If [people] are diagnosed late in their life with Type 1 diabetes they didn’t go through the types of experiences I would have as I was diagnosed young. But that is why Connected in Motion is such a great thing, because they can have these similar experiences but at the age, well, where we are now—as a young adult. Slipstream is great for them because they can have that same camp experience that I have always had but now they are too old to go to camp. So this is their opportunity to meet other people. (Britney, May, 2010)

Being Outdoors Impacted Behaviours and Feelings

Being outdoors was the first sub-theme that emerged. Participants described outdoor activity as being necessary for success as a group. Participants spoke repeatedly

of three ideas relating to this sub-theme: the outdoors as a catalyst for change, the outdoors giving a sense of comfort and physical geography as being important.

The outdoors as a catalyst for change. Two participants spoke of how previous experiences that they had had in the outdoors had influenced their life choices more than any other sort of experiences. Britney recalled the first time she had a real outdoor camping experience. She was ten years old and newly diagnosed with Type 1 diabetes. Britney's parents dropped her off at an outdoor activity based summer camp for children with diabetes. She recalled: "I showed up at camp and I started crying because I didn't want to be there and when [my parents] picked me up I was crying because I didn't want to leave" (Britney, May, 2010).

Four of the six participants spoke of how they felt more comfortable and, in some cases, more confident with their Type 1 diabetes management after being involved in outdoor activities—both through Connected in Motion's Winter Slipstream weekends and on their own. Britney had spent the previous five summers working as a counselor and leadership instructor at an outdoor activity based summer camp. Most recently, her job involved leading groups of teens with Type 1 diabetes on bi-weekly canoe trips. Although Britney named several aspects as being influential, the outdoor aspect of her work was included as an important factor in encouraging her comfort with her diabetes:

I definitely think that being outdoors for the summer—being surrounded by other diabetics, going camping, being at camp, doing the activities that we ran—I feel like that has totally made me who I am. I am a more outgoing person. I am very comfortable with my diabetes. I am comfortable around other people. (May, 2010)

The outdoors and a sense of comfort. Britney continued to describe what it was like to meet people who had not had the same outdoor experiences that she had. She immediately recalled how many of her friends with Type 1 diabetes who had not had outdoor experiences seemed uncomfortable with the disease. “When I meet someone who is not comfortable with their diabetes, it’s so, weird to me. I want to help them get to where I am because I know diabetes can be comfortable and you can control it” (Britney, May, 2010).

Hayley shared some similar experiences to Britney. Hayley, although not as recently as Britney, had also worked a staff member at an outdoor activity based camp for children with Type 1 diabetes as well as attending as a camper. Through her experiences at camp, she had the opportunity to take part in several multi-day canoe trips. Hayley was asked to consider how her life may have been different had she not had these outdoor experiences as a child:

I feel that if I hadn’t had those experiences and I hadn’t met those people and gone to camp, I feel like there would be a lot less confidence in my lifestyle today. I feel like I’d be more sheltered, and would be more nervous to try to do new things. (May, 2010)

When asked how she came to this conclusion, she explained, as Britney did, how many of her friends who did not have the same outdoor experiences seemed less confident and less comfortable with their diabetes.

Hayley was asked how the experiences with Connected in Motion’s Winter Slipstream weekends had compared to her outdoor experiences as a child and an adolescent. She explained that she felt that the outdoor experiences she had had as a

young adult really exemplified unsheltered life. She explained that she believed the outdoors might not afford the comforts that many people are so used to. She summed up her thoughts by explaining: “It was definitely the open outdoors that really instilled confidence in my diabetes management” (Hayley, May, 2010).

Stefanie had never had outdoor camping experience as a child. For her, Connected in Motion’s 2009 Winter Slipstream was her first opportunity to participate in outdoor activities such as snowshoeing, skiing and ice sports. She recalled:

It was really a changing point in my life where it gave me the confidence and the feeling that I could try new things, I could do new things. I could step out of the box and I knew that there would be people there to support me. (Stefanie, April, 2010)

Following Stefanie’s outdoor experience at Connected in Motion’s Winter Slipstream in 2009, she explained that she felt that she was ready and able to try some more adventurous winter sports on her own. She credited her outdoor experiences at Winter Slipstream with providing her a level of comfort with her Type 1 diabetes that allowed her to take up snowboarding in the winter of 2010.

Physical geography and climate factors. Four of the six participants spoke of geography and climate when discussing the factors limiting or encouraging their outdoor activity participation. Emily, having moved to Ontario from Western Canada when she was seventeen years old, was finding it more difficult to participate in the outdoor activities she once loved because of the limits of Ontario’s physical geography. Emily skied, mountain biked, hiked and kayaked when she was younger, but explained that moving across the country was something that had limited her participation. She

explained that, when she moved, many of the outdoor activities that she once enjoyed were not as common in suburban Ontario. In order to remain physically active, Emily took up jogging, but even a jogging routine was difficult to maintain through the winter season. "I usually take some time off in the winter from running because I don't like the cold as much, but after I went to Slipstream, I kind of got motivated" (Emily, April, 2010). Emily spoke of Connected in Motion's 2010 Winter Slipstream weekend as being the first time since she had moved to Ontario that she felt she could be engaged with the outdoors again.

Hayley, Ashley and Shondra all discussed how the weather was often a key component in making an outdoor experience comfortable for them. When asked to describe the Winter Slipstream that they had attended each individual began by describing the weather. Hayley reported: "The weather was awesome and it meant that we got to spend a ton of time outdoors" (May, 2010) with reference to the Winter Slipstream weekends of 2009 and 2010.

Another important aspect of the outdoor experience was the many options that were made available to the group. When describing her experience at Winter Slipstream 2010, Britney recalled:

I'm scared of heights, so I didn't go do the high ropes but there was always something for me to do! You can go and do tobogganing or you could go and, you know, it was just really easy to be comfortable! You could choose what you wanted to do. You didn't get pushed too far outside of your comfort zone.

(May, 2010)

Hayley had a similar experience relating to heights. When asked if she felt pressured to participate she replied: “No, I didn’t. It was very open that way. I didn’t feel pressured at all. You could totally choose to do whatever you’d like” (Hayley, May, 2010).

Adulthood is When We Realize the Importance of Healthy Living

Another repeating and seemingly important sub-theme in creating a successful experience among the group involved in the Winter Slipstream weekends was not only the fact that all individuals involved were similar in age and at similar life stages, but was the idea that, perhaps, adulthood is the most important time for real change to be stimulated. Several participants explained that it was their beliefs that young adults start to consider the impact of his/her decisions more so than adolescents do. These young adults might be more likely to experience burnout with relation to Type 1 diabetes management. They also, however, may start to realize that there are new, and perhaps better ways to manage diabetes. Five of the six participants discussed these ideas with relation to Winter Slipstream.

Self-management realizations during adulthood. Participants were asked whether or not they felt that the concept of an outdoor and physical activity-based group participating in experientially-based health education was something that could be successful for a group of young adults, considering that this sort of group experience was usually catered to groups of adolescents, as discussed in Chapter Two. Shondra responded:

I would think that this age group is even more impressionable than adolescents. I think that in this time in your life, you start to look at life with a different set of

eyes. You maybe look at the impacts of health decisions more than when you were fourteen or fifteen. (April, 2010)

Emily responded with a personal example. She explained, “When I got to my twenties I thought: ‘Hey, maybe I should start taking care of myself’” (Emily, April, 2010). She recalled hearing about how important Type 1 diabetes management was and how important preventative measures against Type 1 diabetes complications could be when she was an adolescent, but explained that during that stage in her life, perhaps because of a common adolescent rebellious mindset, she felt that there must have been more important priorities to deal with. She described her mid-twenties as the time when she really understood how important Type 1 diabetes care really was.

Type 1 diabetes and burnout. Another idea that emerged was the feeling of burnout. Stefanie described how, because of her young age of diagnosis with Type 1 diabetes, she had experienced Type 1 diabetes burnout. “I think a lot of people, especially because you are older and many people have been dealing with diabetes for a long time, you can feel very exhausted and burnt out” (Stefanie, April, 2010). Stefanie described burnout as being the feeling of exhaustion with dealing with Type 1 diabetes and explained that it often resulted in poor care and unhealthy choices.

As mentioned previously, Emily described the lack of opportunity for adults with Type 1 diabetes to be involved in any sort of fun, active experiences. This idea related to what Stefanie described as burnout. Emily described how, when there is no outlet to share experiences, share tips and learn from one another, Type 1 diabetes can become exhausting. Similarly, Hayley summed up her feelings about Type 1 diabetes and burnout with praise for Connected in Motion’s Winter Slipstream weekends by stating:

“I think that Connected in Motion was something that was missing in the diabetes community” (May, 2010).

Although diabetes burnout and exhaustion were described by the participants as a very negative experience associated with young adulthood and Type 1 diabetes, there were several positive aspects to living with Type 1 diabetes as a young adult. Emily compared her experiences as a child with Type 1 diabetes to those of a young adult:

When you’re a kid, you’re, well, stupid. It’s not until you’re older that you start to learn things and you start to realize that there are new ways of doing things. It has only been, like, maybe the past, well maybe the past 5-7 years or so when I wanted to try better. (April, 2010)

Other participants shared similar ideas.

Shondra spoke of how she felt, as a young adult, more inclined to stay in contact with her endocrinologist and Type 1 diabetes healthcare team compared to when she was an adolescent. She described how she believed that this feeling might resonate with other individuals whom she had met through Connected in Motion’s Winter Slipstream weekends. “If you meet up with Connected in Motion and you are hearing new strategies and talking with other people, I think you are more motivated to stay connected with both your doctor and the diabetes community” (Shondra, April, 2010). Shondra went on to explain how she would learn about new strategies through her experiences at the Winter Slipstream weekends and would be excited to share these strategies with her Type 1 diabetes healthcare team. She reported that, “when you are older, you are more receptive of what other people are doing” (Shondra, April, 2010).

Experiences Mirrored Those of Childhood

Five of the six participants spoke of their experiences with Connected in Motion's Winter Slipstream weekends as mirroring those of their childhoods. They spoke of appreciating how the outdoor activities made them feel and extended their answers to speak about childhood memories of outdoor activity.

Resemblance of childhood experiences. Ashley described her experiences at Winter Slipstream with relation to her childhood: "It was just about going out there, having fun and kind of like being a kid again" (April, 2010). She used words such as "carefree" and "informal" to describe both the way she felt and the outdoor activities themselves that she participated in during the 2010 Winter Slipstream weekend. She likened her experiences at Winter Slipstream to her childhood and elementary school experiences.

Britney recalled her weekend as being, in a way, like both her family camping and her summer camp experiences. She explained, "I really missed doing all of the camping things with camp and with my family because I hadn't done it in a while and I wanted to get back into it" (Britney, May, 2010). When asked how she believed these experiences might feel to people who had never had camp or outdoor experiences as a child, she replied: "Slipstream is great for them because they can have that same camp experience that I have always had, even though they are now too old to go to camp. It's never too late to get involved in outdoor activities" (Britney, May, 2010).

Familial influence. Just as Britney alluded to in the previous excerpt, childhood experiences were quite important to participants. Britney explained that she was felt quite fortunate. Her entire family, especially her dad, had always been outdoors people.

This was what initially sparked her interest and fostered her love for camping and for the outdoors.

Shondra also attributed her love for the outdoors to her family:

As children, my brother and I weren't actually allowed to watch television so any of our extra time was always spent outdoors, just kind of in a backyard. That was something we did every single day. (April, 2010)

Shondra's early experiences were so influential and important to her that she decided to change her major during her first year of university in order to be allowed to spend more time outdoors. She went on to pursue a career in teaching and sought out employment as an outdoor educator immediately following the completion of her teaching degree.

Both Hayley and Emily attributed much of their love for the outdoors to their sisters. Emily recalled how, when she lived in Western Canada she spent much of her time mountain biking with her sister. Similarly, Hayley spoke of her sister as the main motivating factor in her outdoor participation, along with her father:

My sister, she's several years older than me, so she and I would go off alone sometimes because she was older and could take me on her own. We'd often spend the weekends camping or having our own outdoor adventures. I also did a lot of stuff with my dad. (May, 2010)

The Greatest Learning was Informal and Natural

Five of the six participants involved in the study spoke of the outdoors as providing an informal and natural forum for learning. Although the Winter Slipstream weekends offered some formal, seminar style learning, the majority of the education was experiential and was peer-based. Informal and natural learning was described through

the conveying of tips and tricks and through dealing with the day in and day out management of diabetes.

Acquiring tips and tricks. When asked to describe what they had learned the most about during her participation at the 2010 Winter Slipstream, both Ashley and Stefanie described how they had learned many tips and tricks. When asked for a specific example, Ashley described the new ideas shared by her peers with regards post-meal spikes in blood sugars:

I found that with meals, I'd get a spike in glucose shortly after eating and then level out after a couple of hours. While at the Connected in Motion Winter Slipstream weekend it was mentioned to me to try a combo bolus. This was a new form of bolusing for my meals. After trying out this new method, I found I wasn't getting the spike. (April, 2010)

Stefanie seemed to sum this idea up well by stating "one of the biggest learning activities was just talking to people" (April, 2010).

The importance of informal learning. Shondra related her informal experiences talking with other individuals to an increase in confidence: "I did feel more confident simply because of my talking to people and hearing their suggestions and knowing that I had perhaps tried those out or being able to give different tips to people made me feel more confident" (April, 2010). She went on to say that she "left the Winter Slipstream weekend with a sense of possibility from hearing everyone else's stories and what they did with themselves" (Shondra, April, 2010). Shondra placed a great deal of importance on learning from other people's stories and taking from those

stories new ideas to try on her own. She explained, “Just hearing other people’s stories kick-started a ‘yah, I should try that’” (Shondra, April, 2010).

Stefanie, Shondra, Hayley and Britney each spoke about how the informal learning experiences provided the greatest and most useful information to them during the Winter Slipstream weekends. Stefanie explained how there had been several different ways that she had learned material over the weekend but insisted that it was the informal sharing that proved to be the most beneficial in terms of her learning. She described some instances where there had been formal sharing: “There was a speaker standing at the front, giving ideas about how to control your blood sugars through different activities” (Stefanie, April, 2010) and although sometimes the most efficient way to convey information, Stefanie explained that the lecture-style teaching was not an experience that encouraged her to truly adopt the new tips and tricks into her every day routines. She described how she felt that when she was actually out trying out the tips and seeing others use them, she learned more. Stefanie reported, “It can be very re-energizing to meet people and get new ideas” (April, 2010). Shondra related her experiences at both the 2009 and the 2010 Winter Slipstream weekends to the informal activities she participated in during her childhood. She recalled the weekends she spent at her grandparents’ cottage as a child: “It was an environment in which there were no video games or televisions or any electronics and we really were just turfed outside and had to come up with our own way to play and have fun” (Shondra, April, 2010). To Shondra, this was very similar to some of her experiences at the Winter Slipstream weekends. Shondra recalled taking time during the 2010 Slipstream to “have her own fun” (April, 2010). Instead of participating in the formally organized activity, Shondra

joined a few of her newfound friends and spent an afternoon exploring, tobogganing and winter hiking. When asked to describe her most memorable moment at Slipstream she stated:

For me, it would probably have been a smaller event, like the toast Chloe gives [refer to Appendix E], or something like the guitar playing around the campfire. It's not necessarily the organized, sporting type events, but they are the events that happen spontaneously based on the people and the vibe that is going down. (Shondra, April, 2010)

Hayley also recalled the informal activities at Winter Slipstream as some of her favourite moments. When asked to describe her greatest learning experience she recalled:

Having an outlet to be, to be a Type 1 diabetic, just to interact with people who are in the same age range—you don't even have to be talking about diabetes. You know, hanging out with a bunch of diabetics, going and grabbing pizza together. It's got great benefits. (Hayley, May, 2010)

Daily management tools. Stefanie described her greatest learning experience as dealing with the “realistic day-in and day-out management of living with diabetes.” She recognized, however, that hearing about other people's experiences and picking up daily management tips was only the first step in creating change. Stefanie spoke of how learning about and actually dealing with the day-in and day-out management of Type 1 diabetes were two different things. Stefanie recognized that “following through on a daily basis is always the trick” (April, 2010).

Hayley seemed very excited about what she had learned at the Winter Slipstream weekends and spoke of how she planned on taking the information home and using not only the new ideas shared by her fellow friends with diabetes, but also using the people she had met as an important part of optimizing her daily Type 1 diabetes routines. Hayley talked about how “it’s easier with someone you can talk to who is already on the pump and someone your own age and someone who has the same lifestyles as you” (May, 2010) with regards to day-in and day-out Type 1 diabetes management.

Britney also spoke of the daily management tips she learned informally through her experiences at the 2010 Winter Slipstream weekend. Britney explained that she believed that she already had a very strong network of friends with Type 1 diabetes—people that she could call up at any time to ask questions. This was not new to her. What she did find new with relation to her daily Type 1 diabetes management was her ability to be flexible in terms of her management and lifestyle. Britney found that her experiences and her learning had helped her deal with unexpected changes in her activity, in her stress level and in her eating habits due to the unpredictable lifestyle of a university student.

The Promotion of Personal Growth

Within the overarching theme, the Promotion of Personal Growth, two sub-themes emerged: (a) Evolving Type 1 Diabetes Self-efficacy and (b) Learning About Yourself. These sub-themes will be presented following a brief overview of the overarching theme, Promotion of Personal Growth.

All of the participants spoke throughout their interviews of the ways in which they had grown as individuals throughout the processes of participating in outdoor

activity at Connected in Motion's Winter Slipstream weekends. As has been reported previously, several participants related their experiences with the Winter Slipstream weekends to changes in feelings of confidence. Shondra felt her confidence had grown after hearing that other individuals had experienced some of the same challenges, frustrations and successes as she had, while Hayley related her increases in confidence to her insulin pump usage and the new techniques she had learned through others at Winter Slipstream. Hayley explained, "my experiences have definitely made me much, much more confident and have trained me to do my blood sugars as I'm supposed to" (May, 2010). Hayley also described feeling that her experiences allowed her to "really open up and to really become confident with what [she] was doing" (May, 2010). She attributes this personal growth to both her involvement in the outdoor activities at the Winter Slipstream weekends, as well as to the similarities in age among participants. Hayley explained, "I feel more confident in the ways that I manage myself because of seeing everyone else manage themselves and their diabetes in such great ways" (May, 2010).

Britney also described her personal growth. She explained, "I've just started to care more" (Britney, May, 2010) with reference to her Type 1 diabetes management through physical activity and healthy living. Britney also described how her experiences had led her to be more flexible with relation to blood glucose management. The personal growth she had experienced was something that she expected many other individuals would experience as well. She explained, "I believe that the experiences that [other individuals] will have with Connected in Motion will influence who they are, what they do and really, what they are capable of as a person" (Britney, May, 2010).

Britney continued to explain how she felt that her outdoor experiences had shaped her into the person she is today.

Evolving Type 1 Diabetes Self-Efficacy

Participants in this study were asked several questions related to changes in confidence as a result of the outdoor activity that they participated in during the Connected in Motion Winter Slipstream weekends. Most participants chose to present the negative feelings that they once had, and then compare those feelings with their present day confidence.

Type 1 diabetes diagnoses. Ashley and Shondra both spoke about their experiences when they were newly diagnosed. Ashley recalled how she had continued to be physically active in the time after her diagnosis but had run into problems. She explained, “I found it challenging just because I was new to diabetes and I wasn’t really sure of what I was doing” (Ashley, April, 2010). When asked to describe what could be done to make sure that other newly diagnosed people with Type 1 diabetes do not have the same negative experiences, Ashley thought for a moment and replied, “newly diagnosed diabetics might not yet have that confidence. Being around others with the same mentality would help” (April, 2010). She went on to explain that experiences like those she had had with the Winter Slipstream weekend in 2010 could be very beneficial for newly diagnosed individuals. Although she believed there could be a risk in overwhelming newly diagnosed participants, she said she thought it could provide a forum to allow Type 1 diabetes self-efficacy to flourish.

Shondra spoke of the same feelings of insecurity and a lack of confidence related to being newly diagnosed. She recalled participating in her first canoe trip—a trip she

took with other adolescents with diabetes. The trip took place only one month after her Type 1 diabetes diagnosis. She reported beginning the trip without much confidence in neither her trip skills nor in her Type 1 diabetes management.

I was very newly diagnosed when I went on that canoe trip and I didn't really think that I'd ever have been able to do that. I mean, the concept of carrying all of our food and supplies and tenting was something that I never thought I could do. (Shondra, April, 2010)

Shondra went on to describe how, after her initial diagnosis, she was overcome with thoughts of all of the things she might not be able to do as a person with Type 1 diabetes instead of realizing the potential of all that she would have because of diabetes. The trip she described was the first time she came to the realization that having Type 1 diabetes might actually present many opportunities for her.

Healthcare team challenges. Four of the six participants involved in this study spoke of the difficulties they had faced with their healthcare teams once they moved from pediatric to adult care. Specifically, they spoke of the challenges they faced with their doctors and of the negative emotions that often accompanied these negative experiences. Britney was the most recent participant to leave pediatric care and move to an adult clinic. She recalled the transition well: "It is challenging. You're losing your nurses, the people you can talk to" (Britney, May, 2010). She spoke of the experience in a very reserved manner. When she moved from her pediatric clinic she placed emphasis on the fact that her new doctor did not feel like he was her doctor anymore—he felt more like a stranger. Britney explained that even her pediatric doctor had been difficult to talk

to and the fact that she had had to move to a new doctor had made managing her Type 1 diabetes even more difficult.

Shondra had a very similar experience:

Once you transition from pediatric to adult healthcare, there is a huge disconnect and loss of support from your healthcare team. If you are not receiving the type of support that you need from your doctor, you are going to be less inclined to keep attending the healthcare program. (April, 2010)

Stefanie also experienced challenges with her Type 1 diabetes education and her transition from pediatric to adult care. She explained, “Once I got out of the pediatric care, and went to the regular endocrinologist, I didn’t have the same constant education” (Stefanie, April, 2010). Stefanie spoke of the 2009 Winter Slipstream weekend as being the first time since her transition that she felt she was truly being educated and being presented with various novel ideas when it came to Type 1 diabetes management.

Finally, Ashley spoke of how she used what she had learned at the Connected in Motion Winter Slipstream in 2010 to educate her endocrinologist: “I talked to my endo about [combo blousing] and she had no idea what I was talking about. We got talking about how this was working for me and the benefits of it” (April, 2010).

Feelings of fear. Four participants spoke of how Type 1 diabetes can be scary to deal with on your own. Hayley spoke of the first time she had an outdoor experience—a three-day canoe trip—while living with diabetes:

It was like so scary for all of us; we were only, I think, 12 years old! Just being able to get in a canoe with a bunch of other kids who had diabetes was very unbelievable for many of us. (May, 2010)

She went on to speak about how she believed that she may have been hesitant to get involved with Connected in Motion's Winter Slipstream weekends had she not have overcome her fear of participating in outdoor activity while living with Type 1 diabetes as a young adolescent.

Emily had also discussed her fears relating to life with Type 1 diabetes. Emily spoke of having a mild fear of hypoglycemia when running on her own. Emily explained that through her experiences at Winter Slipstream in 2010 she was able to curb that fear and be more proactive in her preparations for potential low blood sugars during activity. When asked to describe what had helped to alleviate her fears, Emily spoke of the group of people she met at the 2010 Winter Slipstream weekend. Emily explained, "[the people I met], they go out and do [outdoor activities] and they aren't scared to do it. Being diabetic isn't holding them back" (April, 2010).

Stefanie also praised the group of people she met at the 2009 Winter Slipstream weekend for helping her to feel more confident in doing outdoor activity. Stefanie had once felt scared to take on new activities but explained that her feelings had changed since getting involved with Connected in Motion: "I think I am willing to try a lot of things that I would have otherwise have been scared to try before. I think it is part of the attitude at Slipstream" (April, 2010).

Feelings of doubt. Along with feelings of fear and of lacking confidence, participants also spoke of feelings of doubt with respect to getting involved with Connected in Motion's Winter Slipstream weekends. Shondra reported, "going into the weekend, I really wasn't sure what to expect" (April, 2010) with reference to the 2010 Winter Slipstream weekend. Shondra spoke of how she had had similar feelings when

getting involved with new activities in the past, explaining, “it can be very intimidating to just jump right into it” (April, 2010). Shondra spoke of how, upon returning home after the 2010 Winter Slipstream weekend she felt much more confident with relation to trying out new activities. She had lost all doubt in her abilities to stay physically active. She also, however, spoke of how she left the weekend with certain feelings of doubt relating to her Type 1 diabetes management. After meeting so many people who had such high goals when it came to managing their Type 1 diabetes and living healthily, she recalled feeling that, perhaps, she was not doing enough in terms of her own Type 1 diabetes management. Shondra recalled, “In actual fact, it probably made me feel like I should be testing more” (April, 2010). When asked if these feelings of doubt had caused a change in her behaviour, Shondra said that yes, she had begun to test her blood sugars much more frequently in the months that had passed since her participation. She added, however, that she was worried that she might fall back into her previous patterns of testing infrequently (I should mention, that Shondra, even when she was following what she called her irregular testing routines, was still testing more times than recommended by her healthcare team) if she did not stay involved with the peer based Type 1 diabetes community.

Stefanie also spoke of how she had had feelings of doubt with relation to her participation in some more adventurous type outdoor activities as a person with Type 1 diabetes. She told me about a particularly exciting experience she had had following her first Winter Slipstream experience in 2009. She, for the first time, had gone white water rafting. She had always doubted herself when she considered going on a white water rafting adventure in the past, particularly with relation to her insulin pump. Stefanie

talked about how she was most worried about her pump falling out of the boat while rafting, but realized that there are so many ways to prevent this from happening that it should not be a worry for her. She also talked about how she realized that even if it did fall out of the boat, she would be just fine. She discussed how her feelings had changed after hearing about other adventures that people with Type 1 diabetes had done, regular people just like herself, and realizing that nothing should hold her back from doing what she wanted to do.

Learning About Yourself

A second sub-theme relating to personal growth related to learning about oneself. Participants spoke about the Winter Slipstream weekends as being something that reinforced beliefs and being something that they were doing for themselves, personally.

The reinforcement of self-management actions and beliefs. Ashley and Shondra spoke about how their experiences with Connected in Motion's Winter Slipstream weekends reinforced the belief that they were doing things right with relation to Type 1 diabetes management. Ashley told me how she believed that she was very independent in terms of her Type 1 diabetes management but that she sometimes felt that she needed reinforcement to give her the confidence that what she was doing in terms of her Type 1 diabetes care was on par with what her peers were doing and with what was recommended by her healthcare team. Ashley explained that getting involved with Connected in Motion's Winter Slipstream weekend in 2009 was what gave her the reinforcement she craved. For Ashley, receiving reinforcement increased her confidence and her Type 1 diabetes self-efficacy.

Shondra spoke of feeling as though she could strike a balance when she was involved with people from Connected in Motion's Winter Slipstream. This balance reinforced that the choices she had made over the past few years of her life, when she had seen a great deal of change, were the correct decisions.

Intrinsically driven motivation. Ashley also described how her experiences with Winter Slipstream in 2010 were intrinsically driven. She told me about how she attended the weekend for no reason other than that it was something she wanted to be a part of. It made her feel differently about her Type 1 diabetes than she had ever felt before. Ashley believed that when she was at the 2010 Winter Slipstream weekend "it was more like [she] had control and less that [her] diabetes had control" (April, 2010).

With regards to attending the 2010 Winter Slipstream weekend, Shondra told me: "I just recall feeling that this was something that I needed to do for myself" (April, 2010). She told me that "It helped [her] get back on track with some of [her] diabetes management" (Shondra, April, 2010) and that she left the weekend with a real sense of possibility of what she could achieve with regards to her Type 1 diabetes management. She told me how she was doing this for herself and not for her Type 1 diabetes healthcare team or for her endocrinologist. She knew that getting back on top of her Type 1 diabetes management was important.

Language Usage

Throughout the interviews, a final theme emerged. This theme was, perhaps, more inductive in nature than the overarching themes and sub-themes presented previously, given that I did not directly query participants about language usage. This theme related to the language used by participants in this study. Three interesting uses

of language emerged. These pertained to the (a) prominent use of the term *diabetic* as opposed to the term *person with diabetes*; (b) the use of the phrase *doing okay* to refer to one's health; (c) the concept of control and (d) finally, the non-use of the prefix Type 1 when referring to Type 1 diabetes.

Person with Diabetes versus Diabetic

Throughout the interviews, each participant referred to herself as either a person with diabetes or as a diabetic. In total, the term diabetic was used forty times among five participants, while the phrase person with diabetes was used six times among only two of the six participants. It was clear, through interview transcripts, that five of the six participants preferred the use of the term diabetic. For example, Emily reported,

It was profound just sitting around with a bunch of other diabetic people who are doing okay and have similar interests that I have. I was smiling for like weeks after I left. I couldn't wipe it off of my face for weeks after. (April, 2010)

Hayley stated, "It was probably my first proud moment of being a diabetic" (May, 2010); Britney explained, "I've totally become a more independent diabetic and I feel very confident" (May, 2010); Ashley said, "Newly diagnosed diabetics might not yet have that confidence" (April, 2010); and Stefanie recalled, "You feel like you might be shunned and looked at as the bad diabetic" (April, 2010). This language was reflected throughout the majority of these participants' interviews. Although Stefanie used the term diabetic most often, in one instance, she did use the phrase person with diabetes. Shondra, on the other hand, solely used the phrase "person with diabetes" (April, 2010). For example, she reported, "I think for some people, it had a really strong impact on them and on how they viewed themselves as a person with diabetes and how they

viewed their life choices” (Stefanie, April, 2010). This language was reflected throughout her interview. Throughout the present study, I have used both the terms person with Type 1 diabetes and Type 1 diabetic. This will be discussed further in Chapter Five.

Type 1 Diabetes Control

Along with the use of the term diabetic, four of the six participants also spoke repeatedly of Type 1 diabetes control. For example, Ashley stated, “It is more like you have control and less that your diabetes has control” (April, 2010) while Stefanie reported, “There was a speaker standing at the front, giving ideas about how to control your blood sugars through different activities” (April, 2010). The debate and issues surrounding the use of the term control with reference to diabetes is discussed further in Chapter Five.

Doing Okay

Also of interest was participants’ use of the phrase doing okay. For example, Emily stated, “It was profound just sitting around with a bunch of other diabetic people who are doing okay” (April, 2010). Hayley reported, “It really opened up my eyes to the possibility of living with diabetes in a good way—in an okay way—in a way to manage my life” (May, 2010). The interest surrounding the choice of the phrase doing okay is discussed further in Chapter Five.

Diabetes Type Prefix Usage

The final point of interest with reference to the language employed by participants was the participants not distinguishing prefix Type 1 when referring to diabetes. Throughout the interviews, the prefix Type 1 was used a total of eight times.

The term diabetes alone was used 57 times. All participants, during their interviews, used the non-prefixed term diabetes. Shondra, Britney and Hayley occasionally used the prefix Type 1 when referring to Type 1 diabetes. This, too, will be discussed further in Chapter Five.

Participant Artifacts

Each participant, upon my request, brought with her to the interview a personal artifact, described as an item that best represents the individual's meaningful experiences in the outdoors. Participants were asked to reflect on and describe verbally the artifact and its significance to their outdoor experiences. A summary of the participant artifact data is presented in Table 3.

The artifacts that participants brought to the interviews included a rope bracelet, a photograph of a horse, a tattoo, a picture frame, a t-shirt and a black feather. All six of the participants' verbal descriptions of the artifacts and the experiences each artifact represented were both vivid and detail-rich. Samples of the participant responses during the artifact-elicitation interviews were included below. It is important to note that although the responses collected during the artifact-elicitation interview were highly detailed; they were previously integrated with the responses from the semi-structured interview above in order to provide the most holistic and encompassing overarching themes. All six participants used very positive terms and phrases to describe the experience represented by their artifacts. Two of the six participants spoke of their outdoor experiences providing support, as represented through their artifacts. For example, Stefanie described her first real outdoor experiences in 2009:

It was really a changing point in my life where it gave me the confidence and the feeling that I could try new things, I could do new things. I could step out of the box and I knew that there would be people there to support me. There was a whole crew of people wearing that same green t-shirt and I could at any point turn to any one of them and ask them for help and I knew that it would be there.

(April, 2010)

The outdoor experiences that Stefanie described above occurred at Connected in Motion's Winter Slipstream in 2009. This is where she had what she described as her "first real outdoor experiences" (Stefanie, April, 2010)

Shondra spoke of her outdoor experiences as being important and influential because of the ways in which she felt the outdoors impacted her as a person with Type 1 diabetes. She described,

Well, basically, being outdoors neutralizes the disease. I don't know. It puts everything in perspective. When you are standing outside in the forest you forget about all the little life stresses that you have and you are focused on the people around you and you are not focused on anything else. It is really a very supportive environment to be in. (Shondra, April, 2010)

The outdoor experience represented by Shondra's artifact, a handmade picture frame, occurred at Camp Huronda, a residential summer camp for children with Type 1 diabetes. She described her experiences at the camp as being the driving force in her decision to pursue an outdoor-focused education and lifestyle.

Two of the six participants discussed how their outdoor experiences had instilled in them a sense of confidence. Hayley, for example, brought to the interview a black

Table 3

An Overview of Participant Artifact Data

Descriptor	Ashley	Emily	Stefanie	Shondra	Britney	Hayley
Artifact	Tattoo of an Inukshuk	Photograph of a Horse	Connected in Motion Green T-Shirt	Handmade Picture Frame	Rope Bracelet	Black Feather
Significant Experience	Winter Slipstream	Horseback Riding	Winter Slipstream	Camp Huronda	Camp Huronda	Camp Carowanis
Age at time of Experience	29	21-30	21	14 – 25	10 – 22	11
Key Words from Description	Energy Involvement Passion Power	Patience Persistence Excitement Teaching	Confidence New Experiences Support Changing Point	Natural Beauty Relationships Perspective Support	Learning New Beginnings Connectedness Meaning	Pride Confidence Possibility No Restrictions

feather that she had received when she was 11 years old at Camp Carowanis, a camp for children with Type 1 diabetes. She received the feather in recognition of her swimming accomplishments as a camper. Hayley described the lasting impact receiving that black feather has had on her as an individual with Type 1 diabetes:

I think it all comes back to confidence again. I think that is my key word in this interview. I mean, I think that it all comes back to that because getting that feather, at the age of 11, really opened up my eyes to the possibility of living with diabetes in a good way, in an okay way, in a way to manage my life. And I was young, so I didn't think about it in those words at that time but I realized that I wasn't restricted from doing the things that I really wanted to do. (May, 2010)

Relating it Back

Although, as outlined previously, phenomenological research is inherently inductive in nature, it was important that I not only report emerging themes, but the ways these emerging themes connect to my original research questions. The relationship between my emerging themes and research questions are outlined below in Table 4. Through deductive analysis, the four primary research questions used to guide this research were explicitly connected with the study's emerging themes. These are presented below.

The first research question that guided the present research asked participants: "What influence do outdoor experiences have in the development of self-efficacy and autonomy among young adults (18-30 years of age) with Type 1 diabetes in Canada?" Four of the six emergent themes relate directly to this research question including: (a) The Evolution of Self Management Practices; (b) Creating a Supportive Community; (c)

and (d) The Recipe for Success and Promotion of Personal Growth. The data relating these themes to the first research question was reported below.

Five of the six participants spoke of the development of powerful feelings that caused, for them, some sort of change. This sub-theme relates directly to the first research question, as stated above. It speaks to the ways in which outdoor experience promotes personal and behaviour change, specifically self-efficacy and autonomy. For example, Hayley explained, “I think I have become more confident which has led me to be more independent with my diabetes” (May, 2010) when asked to describe the personal changes she had experienced following her outdoor experience. Hayley spoke specifically of a positive change in both her confidence (diabetes self-efficacy) and her independence (autonomy). Ashley went further to describe the changes she had seen following her outdoor experiences as a result of her gaining confidence. She explained, “once you have the confidence to go out there, you aren’t held back by anything” (Ashley, April, 2010). Ashley went onto describe her newly gained confidence in trying new activities, specifically with relation to trail running.

The five participants whose responses support both this overarching theme as well as the first research question described how their outdoor experiences positively influenced their self-efficacy. Hayley was the only participant to describe increased feelings of independence (autonomy) following her outdoor experience. She described these increases briefly and on only one occasion.

Four of the six participants spoke of their outdoor experiences as being an opportunity to step away from the independent lifestyle they had been used to, and towards being part of a larger, more supportive community. This related directly to the

Table 4

An Overview of Research Connections and Emerging Themes.

Research Question	Theme
1. What influence do outdoor experiences have in the development of self-efficacy and autonomy among young adults (18-30 years of age) with Type 1 diabetes in Canada?	The evolution of self management practices
	Creating a supportive community
	The recipe for success
	Promotion of personal growth
2. How might the development of self-efficacy and autonomy affect diabetes management in young adults with Type 1 diabetes in Canada?	The evolution of self management practices
	Redefining what is normal
	The recipe for success
	Promotion of personal growth
3. Is the nature of outdoor experience influential in the development of autonomy and/or self-efficacy among young adults with Type 1 diabetes in Canada?	The recipe for success
	Creating a supportive community
4. Does participation in the non-profit organization Connected in Motion's outdoor events influence the development of self-efficacy and autonomy in young adults with Type 1 diabetes?	The evolution of self management practices

first research question. Four women reported that participation in outdoor experiences did not influence their independence and instead allowed them to rely on one another. They described this reliance as positively benefiting their experiences.

Both Shondra and Stefanie spoke of independence with relation to their diabetes diagnosis. They spoke of their belief that having diabetes had forced them to gain independence in order to live normal lives. Shondra admitted that all of the individuals in her family were very independent and that independence may have been a family trait. Shondra explained, "I think if I hadn't had diabetes, I would have been somewhat independent, but I think that my having diabetes kind of accelerated my claiming of my independence" (April, 2010).

Five of the six participant spoke of the ways that the outdoor aspect of their experiences ensured success. Five participants spoke specifically of the outdoor experience impacting their behaviours and feelings, specifically their self-efficacy behaviours. This relates directly to the first research question. Five of the six participants felt that the outdoor experience has a positive influence on self-efficacy.

With relation to her outdoor experiences, Hayley explained, "You don't have the comforts that you have here that keep you sheltered. It was definitely the open outdoors that really instills confidence" (May, 2010). Her report demonstrates the direct connection she experienced between being outdoors and gaining confidence.

Similarly, Stefanie related her experience at the first Winter Slipstream in 2009 to her gains in confidence:

It was really a changing point in my life where it gave me the confidence and the feeling that I could try new things, I could do new things. I could step out of the box and I knew that there would be people there to support me. (April, 2010)

More specifically, Stefanie spoke of her first experience cross country skiing and the confidence it gave her to try out new sports on her own. During the spring following her first outdoor experience with Connected in Motion, Stefanie went white water rafting—a novel experience for her.

The overarching theme relating to the promotion of personal growth provided, perhaps, the greatest link between the main themes of this study and the first research question. All six participants spoke of the promotion of personal growth specifically relating to self-efficacy and autonomy and catalyzed through outdoor experience. More specifically, participants spoke of the evolution of diabetes self-efficacy and learning about oneself.

Several examples of participant reports within the theme of the promotion of personal growth exist, specifically with relation to the first research question. Shondra reported how her confidence improved following her very first outdoor experience as a person with Type 1 diabetes:

I was very newly diagnosed when I went on that canoe trip and I didn't really think that I'd ever have been able to do that, so the concept of carrying all of our food and supplies and tenting was something that I never thought I could do. (April, 2010)

Similarly, Hayley spoke of the doubt she felt before her first outdoor experience as a person with diabetes: "It was like so scary for all of us, we were only, I think,

12...Just being able to get in a canoe with a bunch of other kids with diabetes was very unbelievable for many of us” (May, 2010). She went on to describe how her confidence had grown as a result of this experience—so much so that she began to organize her own outdoor adventures with her friends from the diabetes camp she worked at. She attributed the confidence she has today directly to the experiences on her first canoe trip.

In addition to evolving self-efficacy, participant spoke specifically about learning about themselves during outdoor experiences. Ashley explained, “before my participation with Connected in Motion is where I really gained my independence. Connected in Motion reinforced everything...the reinforcement adds the confidence” (April, 2010). This specifically relates to the first research question and supports previously presented points outlining that outdoor experience strongly influences self-efficacy, but does not influence the gaining of independence among participants.

The second research question that guided the present research asked: “How might the development of self-efficacy and autonomy affect diabetes management in young adults with Type 1 diabetes in Canada?” Four of the six emergent themes relate directly to this research question including: (a) The Evolution of Self Management Practices; (b) Redefining What is Normal; (c) The Recipe for Success and (d) Promotion of Personal Growth. The following section relates these overarching themes to the second research question.

All six participants described the evolution of self-management practices, specifically the creation of powerful feelings promotion change. The six participants related the development of self-efficacy to increased positive diabetes self-management behaviour. Only one participant spoke directly of autonomy development as a result of

her outdoor experiences; however, all six participants spoke of the role that autonomy plays in diabetes self management. These discussions will be outlined further.

Hayley stated, "I think I have become more confident which has led me to be more independent with my diabetes" (May, 2010). This comment related specifically to Hayley's confidence in her diabetes self-management abilities. She explained that she did not believe she became more independent or autonomous because of her outdoor experiences, but that her outdoor experiences provided her with confidence in her diabetes self-management abilities and as a result, she became more autonomous. Emily spoke of her outdoor experiences giving her more confidence in her diabetes self-management abilities and that that confidence "gave [her] more courage to try something new" (April, 2010). Specifically, Emily spoke of how she had made plans to take up running and that this decision was a result of her newfound confidence in her self-management abilities as a person with Type 1 diabetes. She explained that the people she met at Winter Slipstream 2010 "go out and do it and they aren't scared to do it. Being diabetic isn't holding them back" (Emily, April, 2010).

Four of the six participants spoke of breaking free of negative and dangerous cycles—something that impacted their diabetes self-management abilities and relates directly to research question two. Britney spoke of the new confidence she had gained through her participation in the outdoor activities at Winter Slipstream 2010. She explained how she had noticed a definite increase in her diabetes self-management abilities as demonstrated through a decreased A1C result in the months following Winter Slipstream 2010. She stated, "I have definitely seen an increase in my control and my A1C has gone down after the months since Slipstream" (Britney, May, 2010).

Three of the six participants provided responses that related to the overarching theme Redefining What is Normal. These responses related directly to the second research question. For example, Ashley stated that, because of the confidence she gained during Winter Slipstream 2010, she felt “[she was] more able to go out and live [her] life just like any non-diabetic” (Ashley, April, 2010).

Stefanie spoke of her experiences watching other people test their blood glucose levels and embrace outdoor physical activity. She explained, “Seeing that that is the norm for everyone else gave me the confidence to just go out there and do it myself” (Stefanie, April, 2010). This relates directly to the second research question. Stefanie gained confidence, and as a result, made positive changes to her diabetes management behaviour including testing her blood glucose levels more often and increasing her level of physical activity.

All six participants contributed to the overarching theme entitled The Recipe for Success. Participant responses related experiences with success to research question two. Specifically, participants explained that self-efficacy and, in one case, autonomy impacted self-management behaviours because of factors relating to participant age at the time of the experience (adulthood) and to the informal and natural ways that confidence and autonomy were fostered. Ashley, Stefanie, Emily, Hayley and Britney all spoke of the ways that their self-management abilities had improved as a result of their gained self-efficacy.

Shondra, however, presented an interesting viewpoint. She explained that she did not gain independence or autonomy during her experience. She described her increased self-management abilities as being a result of being able to step away from the

independent lifestyle she had been used to living. She stated, “instead of giving me independence to do my own thing, [my experiences at Winter Slipstream] gave me new ideas to try out” (Shondra, April, 2010).

Only one participant, Ashley, spoke of the promotion of personal growth as a direct factor relating to increased diabetes self-management. Ashley described a progression of personal growth in which she gained confidence, gained a feeling of control over her Type 1 diabetes and significantly improved her diabetes self-management as a result. This progression occurred following her experiences at Winter Slipstream 2010.

The third research question that guided the present research asked participants: “Is the nature of outdoor experience influential in the development of autonomy and/or self-efficacy among young adults with Type 1 diabetes in Canada?” Two of the six emergent themes relate directly to this research question (a) The Recipe for Success and (b) Creating a Supportive Community. Although only two of the six themes relate to the third research question, all six participant voices are represented within these themes. These two themes are related directly to the third research question in the following section.

Five of the six participants involved in this study provided responses that outlined the nature of the outdoor experience and related these factors to both the development of self-efficacy and/or autonomy and the elements necessary for a successful experience. With relation to the nature of the outdoor experiences influencing the development of self-efficacy and autonomy, participants spoke specifically about the

importance of informal and natural learning that mirrored experiences that they had had in the past.

When asked to describe what it was about the outdoor experience that caused the change she had reported in her self-efficacy, Shondra replied, “it’s not necessarily the organized, sporting type events, but they are the events that happen spontaneously based on the people and the vibe that is going down” (April, 2010). Hayley mirrored this response and explained that she believed simply having other people who are the same age and who have had the same experiences as you surrounding you during outdoor experiences had a great impact on her development of confidence.

Five of the six participants recognized that one of the factors that influenced their successful experiences at Winter Slipstream was the fact that the outdoor activities they took part in during the weekend mirrored those of their childhoods. For example, Ashley reported that Winter Slipstream 2010 allowed her to take part in outdoor activities that she hadn’t taken part in since she was in elementary school. She explained, “it was just about going out there, having fun and kind of like being a kid again” (Ashley, April, 2010). Britney recognized that, although the outdoor experiences of Winter Slipstream mirrored those of her childhood, individuals who had had very different childhood experiences could still benefit, specifically with relation to personal growth and self-efficacy development.

Five of the six participants involved in the present study spoke of the creation of a supportive community as being an important part of the outdoor experience and one that influenced the development of self-efficacy and/or autonomy. Specifically, five of the six participants praised the similarities among the group members and attributed

those similarities and the ways that they influenced the outdoor experiences and the development of their character.

Shondra described her feelings when she first began her Winter Slipstream 2009 experience. She explained that there was something special about the atmosphere that was created by the group. Shondra reported,

I remember when I first walked in. I felt a sort of community already. It was a very comfortable situation. Everyone really, immediately, seemed to get along really well and started sharing things that you would normally think people wouldn't share after just meeting each other but that was just the nature of the experience. (April, 2010).

The relationship between the inviting and open atmosphere described by Shondra and her development of self-efficacy will be described further in Chapter Five with relation to perceived sense of community.

As outlined previously, Stefanie described how she gained confidence through trying new things. She attributed her ability to try new things to the lack of judgment portrayed by the group involved in her outdoor experience. She recalled, "just trying new things that are maybe a bit out of my comfort zone, like cross-country skiing. I'm not good at it, but I did it" (Stefanie, April, 2010). Emily mirrored this response. She described, "It didn't matter if you weren't good at something—you could still do it" (Emily, April, 2010).

The fourth, and final research question that guided the present study asked: "Does participation in the non-profit organization Connected in Motion's outdoor events influence the development of self-efficacy and autonomy in young adults with Type 1

diabetes?” Only one of the six emergent themes, The Evolution of Self-Management Practices, related directly to this research question; however, five of the six participant voices were represented. This theme is outlined subsequently, specifically with its relation to the fourth research question.

As mentioned previously, five of the six participants provided responses that related directly to the fourth and final research question. When asked specifically about the role that Connected in Motion had played in providing outdoor experiences, participants responded overwhelmingly that involvement with Connected in Motion drove them to try new things and to take better care of themselves through diabetes management.

Shondra related her experiences with Connected in Motion directly to her gaining of self-efficacy. She reported,

I've tried so many activities first with Connected in Motion, like rock climbing and whatnot that I am now able to do those activities with other friends and with other groups with a bit more confidence that I might have otherwise had.

(Shondra, April, 2010).

Emily provided a similar response, adding that her experiences with Connected in Motion also gave her more courage to try new activities. Stefanie attributed her newfound confidence to the attitude of the people she met through Connected in Motion. She reported, “I think I am willing to try a lot of things that I would have otherwise have been scared to try before. I think it is part of the attitude at Slipstream” (Stefanie, April, 2010).

Britney speculated as to how involvement with Connected in Motion may impact other individuals, based on her own experiences. She reported, "I think that Connected in Motion will still impact them. Maybe not who they will become as a person, but it will impact their diabetes management" (Britney, May, 2010). Hayley explained that being involved with Connected in Motion "really drove [her] to take care of [herself] better" (May, 2010). Although she did not speak directly about the ways in which her involvement with Connected in Motion influenced her gaining of confidence, based on information reported with regards to other research questions, it was likely that her increased level of care had resulted from increased self-efficacy. This will be explored further in Chapter Five.

Summary

Chapter Four presented the results of this study. As an investigation of the lived experiences of six women living with Type 1 diabetes who had participated in an outdoor activity based weekend, results were presented around six main overarching themes. The first theme explored the evolution of Type 1 diabetes management as reported by the six participants. Within this theme, three sub-themes emerged relating to cycles and circles, changes in behaviours and changes of feelings. The second theme centred on the creation of a supportive community and was illustrated through the praised characteristics of the group, the similarities among group members and the supportive nature of the individuals involved. The third theme explored the concept of normalcy through an investigation of what it meant to participants to feel normal within the group as well as in the eye of the public. The fourth theme identified the factors necessary for a successful experience to occur. Sub-themes related to the outdoor

environment, the age of participants, the types of experiences and the ways in which the experiences were constructed. Finally, the fifth theme examined the personal growth experienced by the participants. This was presented through an investigation of the evolution of Type 1 diabetes self-efficacy and learning about oneself. These themes serve as a representation of the lived experiences of the participants involved in this study. They represent the ways in which the experiences participants had at the Winter Slipstream weekends in 2009 and 2010 influenced their lives as individuals with Type 1 diabetes.

CHAPTER FIVE: DISCUSSION AND IMPLICATIONS

For over twenty months I have worked towards being able to present these results and am thrilled and excited with the new understandings I have discovered as a result of this process. I believe that I have uncovered some very valuable information through investigating the experiences of the study's participants. My intentions were to study the ways in which outdoor experience and character development influence Type 1 diabetes management; however, the participants in this study led me down a different path. Instead of focusing on the ways in which character development influenced Type 1 diabetes management, I found that themes such as community development through outdoor experiences and how this sense of community influenced Type 1 diabetes management, for example, dominated participants' reports. Although character development plays a role in Type 1 diabetes management according to participant reports, the process of data analysis revealed that, of greater importance to the participants, was the idea that a sense of community allowed for better Type 1 diabetes management. A synthesis of the findings from this study is presented below in the discussion. This synthesis of results is integrated into the body of relevant literature. This will be followed by my recommendations about implications for practice, for theory and for future study.

Overall, the six emergent constructs were: (a) The Evolution of Self-Management Practices; (b) Creating a Supportive Community; (c) Redefining What is Normal; (d) The Recipe for Success; (e) Promotion of Personal Growth; and (f) Language Usage. Chapter Five offers a discussion of the six emergent themes with relation to the relevant literature and to the research questions. Additionally, Chapter

Five provides the implications of this research for practice, for theory and for further research.

Discussion and Conclusion

Overall, many of the findings in this study paralleled the literature reviewed in Chapter Two and not only provided support for this existing body of literature, but elaborated on and allowed new insight into using outdoor experiences as an alternative form of Type 1 diabetes education exemplified through Connected in Motion's Winter Slipstream weekends. As previously mentioned, I completed a review of the relevant literature in advance of the commencement of data collection. In light of the results, I have included additional literature in this chapter—literature that resonates with the specific findings. The following chapter integrates the findings from this study with the relevant literature as previously presented as well as an integration of literature that relates to some new findings.

Overall, the findings of this study paralleled much of the literature presented in Chapter Two. Additionally, the findings extended much of this literature by adding some detail derived from an analysis of the reported lived experiences of the study's participants. The ways in which the overarching themes served as an extension to the literature are first considered.

The Evolution of Type 1 Diabetes Self-Management Practices

As presented in Chapter Four, participants reported positive change in Type 1 diabetes self-management behaviour as significant. Participants reported that Type 1 diabetes management often flowed in cycles and circles. For example, Emily reported,

I've been struggling for, well, for forever, pretty much since I was diagnosed.

But you go through periods when you want to try to get it right and then you get frustrated and you don't want to bother trying and then you try again and you get frustrated. What I was doing obviously wasn't working, so I thought I was going to have to try something different. So I thought if I actually met other people who were diabetic that they might have some insights or just something, I might learn something from them or learn that it is possible to get it right most of the time. (April, 2010)

Here, Emily pointed out an important point in the evolution of her self-management. She reported the realization that she, alone, needed to make the next move in terms of her Type 1 diabetes care. This realization is referred to within the chronic illness literature as psychological ownership (King et al., 2003) and is triggered by a "turning point" (Rutter, 1979; Rutter, 1987; Rutter, 1990). The turning point in Ashley's life was triggered by her realization that the negative cycle she had fallen into in terms of her Type 1 diabetes self-management needed to be interrupted. In an attempt to interrupt this cycle, Emily reached out to the Type 1 diabetes community in her area and discovered Connected in Motion's Winter Slipstream event. In registering for this event, Emily was taking psychological ownership over her own Type 1 diabetes self-management. Through understanding that she was being challenged by her self-care, realizing that she had the ability to change her self-management practices and actively seeking out opportunities to make the changes she needed, Emily was allowing the positive evolution of her Type 1 diabetes self-management practices.

Not only did Emily take action to interrupt the negative cycle she was experiencing, she continued to make change following her experiences at Winter Slipstream, allowing for further evolution of her self-management practices. Emily reported that, upon her return home from the Winter Slipstream weekend in 2010, she took steps towards utilizing a CGM in her daily care.

Several participants also reported that both novel experiences and the creation of powerful feelings promote behaviour change, including change in physical activity behaviour, with relation to the self-management of Type 1 diabetes. As reported in Chapter Two, one of the most important factors in ensuring successful Type 1 diabetes self-management is physical activity participation (Grossman et al., 1987; Lorig et al., 1999). Several participants reported experiencing physical activity behaviour change both during and following the Winter Slipstream weekends. For example, Shondra reported,

I've tried so many activities first with Connected in Motion, like rock climbing and whatnot, that I am now able to do those activities with other friends and with other groups with a bit more confidence that I might have otherwise had. (April, 2010)

For Shondra, her behaviour change was stimulated through a change in confidence. As discussed in Chapter Two, there are several reasons why outdoor experience may influence behaviour change. Russell and Phillips-Miller (2002) claim that physical activity, primitive wilderness living, peer feedback and unique participant-leader relationships are the most influential elements of outdoor programming with regards to behaviour change. The experiences that Shondra and the other participants reported

following the Winter Slipstream weekends reflected three of these four elements. The experiences incorporated physical activity, encouraged peer-based learning and involved a unique participant-leader relationship wherein the group leaders were, in fact, also peers. These elements will be discussed further in subsequent sections. One element that was, perhaps, missing when comparing the Winter Slipstream programming with Russell and Phillips-Miller's (2002) suggestions was the incorporation of primitive wilderness living. This will be discussed further in terms of implications for future research.

The results from the present study resonate with much of the relevant literature. Discussed throughout the literature relating to Type 1 diabetes self-management is the idea of Diabetes Self-Management Education (DSME) (Jack, 2003; Mensing et al., 2002). DSME has been shown to assist individuals in overcoming a large number of the challenges associated with living with Type 1 diabetes as a young adult (Jack, 2003) as is outlined in Chapter Two. As Stefanie reported in the present study, however, young adults often face many challenges in seeking out effective Type 1 diabetes education. Stefanie recalled, "Once I got out of the pediatric care, and went to the regular endocrinologist, I didn't have the same constant education" (April, 2010). Although DSME is said to influence Type 1 diabetes knowledge, psychological measures (including self-efficacy), diabetes related behaviour and short-term physical factors including BMI, blood pressure and A1C measures (Jack, 2003), according to the results of the present study, as demonstrated by Stefanie's reported experience above, young adults with Type 1 diabetes may require special educational programming to meet their unique needs. Norris et al. (2002) recognized that young adults have unique needs and

as such, completed a meta-analysis that examined the effectiveness of DSME programs for individuals over the age of 18 that occurred in settings outside of the hospital including "community centres, libraries, private facilities, seniors centres, faith organizations and churches" (p. 418). The use of alternate settings may resonate more effectively with young adults as evidenced by Stefanie's description of her present adult diabetes education facility. She described: "It is very sterile" (Stefanie, April, 2010).

In his meta analysis of DSME programs in varied non-clinical settings, Norris et al. (2002) found DSME programs to have a significant impact on the glycemic control of the participants; however, no effect was found on any of the other DSME influences discussed above. Jack (2003) reports that one reason for this may be the lack of peer-to-peer interaction, as the DSME sessions were being facilitated by doctors and Certified Diabetes Educators and the lack of real-world application to Type 1 diabetes. The results from this present study extend this body of literature and provide further information regarding Jack's (2003) suggestions. Participants in the present study reported that it was not only the setting in which the Type 1 diabetes education occurred that was important, but also the peer-to-peer learning environment that was created through the experience. Connected in Motion's Winter Slipstream weekends provided participants with peer-based educational experiences, as well as opportunities to break free from the traditional Type 1 diabetes education settings found throughout North America.

Creating a Supportive Community

The theme of Creating a Supportive Community is demonstrated through the results of this study in several ways. In order for a supportive community to develop,

participants spoke of the need for nonjudgmental peers in the group, the need for an inviting atmosphere, for the group to be "supportive" and "a place for sharing".

Throughout the literature, one of the greatest factors in ensuring individuals are prepared to take on many of life's challenges is the presence of a supportive social network (Blum, 1998; Heatherton & Nichols, 1994; Swartz, 2009; Wagnild & Young, 1993). In fact, Breunig, et al., (2008) indicate that perceived sense of community is developed through participation in outdoor pursuits, a finding that resonates strongly with the present study. It is no wonder, then, that participants in my study expressed the need for a supportive community. For many of the individuals, the experiences of Winter Slipstream were novel, and undoubtedly challenging. For example, Stefanie asserted that one of her fondest memories of Winter Slipstream 2009 was having the opportunity to try something new, such as cross-country skiing. Stefanie recalled the outdoor experiences she had during the weekend providing an opportunity for her to step out of her comfort zone and try activities that she might otherwise have found too challenging.

Additionally, Britney recalled that the activities she participated in during Winter Slipstream 2010 were activities that she had felt embarrassed to try in the past. She recalled feeling nervous to try snowshoeing because it was something new to her, but also reported that she was excited at how supportive the group had been and how encouraging everyone was to each other. This resonates with an American Camping Association study, as reported by Swartz (2009), in which approximately 2500 wilderness summer camp attendees reported significant increases in willingness to try new things as a result of the social support experienced during wilderness camping. Additionally, Norris et al. (2001) investigated whether diabetes education was more

effective in individual or group settings and found that group education settings were more effective in terms of life-style change than individual education sessions.

Unfortunately, the Norris et al. (2001) study focused only on Type 2 diabetes education, as do many other studies investigating group diabetes education (Davies et al., 2008; Kulzer et al., 2007; van Dam et al, 2003). In summary, as can be gleaned from the above section in the results relevant to supportive community, the greatest challenge lay not only in the fact that the participants were taking on new physical challenges, but that they were doing so with the added challenges associated with Type 1 diabetes and young adulthood.

Participants reported that it was important to them that their peers were non-judgmental. I found this interesting as it extended an idea presented by Richards, Morris, Booker and Johnson (2006). Richards et al. reported that the individuals involved in his study felt that one of the most important factors contributing to their successes as a people with Type 1 diabetes was that healthcare workers were non-judgmental when it came to Type 1 diabetes care. The findings of the present study take this idea one step further. According to participant reports, not only is it important that healthcare professionals refrain from judging their patients with Type 1 diabetes, it is also important that individuals with Type 1 diabetes do not judge each other when in a peer-to-peer education environment. This finds resonance through Hayley, Shondra and Stefanie's interviews. Hayley described the group as being very open-minded and non-judgmental. She described this characteristic of the group as having a great deal of impact on her positive experience during Winter Slipstream 2009 and 2010. Several participants reported feeling a lack of judgment from their peers and that it was

something that promoted a strong sense of community. In fact, Stefanie reported, “As much as I felt pressured to make good choices, I felt like I wasn’t being judged for making bad ones” (April, 2010). A similar, but distinct need described by participants was supportive peers.

Young adults with Type 1 diabetes appreciate caring and supportive friends (Sparud-Lundin, Ohrn & Danielson, 2010). The present study not only supported this conclusion, but also extended it by suggesting that young adults with Type 1 diabetes appreciate caring and supportive friends who are also living with Type 1 diabetes. For example, Shondra reinforced the appreciation for caring and supportive peers and described a “general feeling of inclusiveness” (April, 2010) while with the group at Winter Slipstream, while Stefanie phrased a similar sentiment using different words when saying that she knew she could “could step out of the box” (April, 2010) and have people there to support her. Overall, participants from my study described the need for a caring and supportive community of individuals who had been through the same things they had been though, who had experienced similar situations and who had overcome, or were currently dealing with the same challenges.

Redefining What is Normal

The idea of normal in the Type 1 diabetes community is often discussed with relation to feelings of normalcy when compared with individuals without Type 1 diabetes (Ritholz et al., 2007), but the idea of normal in comparison to peers with Type 1 diabetes was something I had not come across in the literature. Several participants from the present study spoke of the idea of testing blood glucose levels multiple times during an activity as being normal. For example, Ashley reported, “It was great not being the

only person having to test my blood sugar” (April, 2010) with regards to testing her blood glucose during physical activity. Additionally, Shondra recalled, “seeing that that was the norm for everyone else gave me the confidence to just go out there and do it myself” (April, 2010), again, relating to testing blood glucose levels during exercise. Participants also spoke of feeling normal when they experienced low blood glucose levels when they were with the other participants at Winter Slipstream. Ashley recalled that it felt great to not be the only person having to take a break to drink some juice or eat some glucose tablets during the activities at Winter Slipstream 2010. These reported feelings of normalcy relate to several aspects of Bandura's (1971) methods for increasing self-efficacy-in this case, Type 1 diabetes management self-efficacy. For participants, being in a situation in which they felt normal, as outlined above provided several opportunities for increased self-efficacy through both mastery experiences and role modeling.

The first opportunity for increased self-efficacy occurred through the creation and encouragement of mastery experiences. Mastery experience is defined as the practice of the desired task (Bandura, 1982) and may be applicable in several realms of diabetes management, as it applies to other chronic illnesses (Dahlbeck & Lightsey, 2008). Mastery experiences are often used in the promotion of health among groups of individuals with chronic illness (Lorig et al., 1993; Lorig et al., 1999); however, the mastery experiences provided to individuals throughout the majority of programs occurred in a clinical setting (Lorig et al. 1993; Lorig et al., 1999) and were facilitated by healthcare professionals (Sturt, Hearnshaw, Barlow & Hainsworth, 2005; Sturt et al., 2008). Instead of creating mastery experiences in a clinical setting, the results of the

present study reported that mastery experiences were created in a non-clinical setting, through creating feelings of normalcy. Feelings of normalcy, in turn, created an environment in which young adults with Type 1 diabetes felt more open to publicly managing their Type 1 diabetes. As described above, Ashley felt it was normal to test her blood glucose level several times during a single activity-something she may not have been comfortable with had it not been the "normal thing to do" (April, 2010). Creating an environment in which participants could feel normal testing their blood glucose levels provided an opportunity for mastery experience through open practice of blood glucose monitoring.

A second way that opportunities for the development of self-efficacy were created was through role modeling. This resonates with Bandura's (1977) self-efficacy theory which asserts that role modeling is one of four ways (along with mastery experiences, verbal persuasion and physiological/affective states) that self-efficacy can be developed. Role modeling relates to the present study in several ways. The feeling of normalcy described by the participants in the present study came through being surrounded by other individuals living with Type 1 diabetes. Through the coming together of people, natural role models were developed within the group. The use of role models in health education is not novel to the present study. In fact, role modeling is commonly used by nurses in clinical health settings (Borchardt, 2000; Clark, 1991). Rush, Kee and Rice (2005) investigated the ways in which role modeling influenced nursing practice in Eastern Canada. The Rush et al. (2005) study reports that nurses believe role modeling to be effective in influencing a patient's value placed on health, self-acceptance and self-reflection practices (Rush et al., 2005). These influences were

demonstrated through nurses gaining the trust of patients, presenting with caring attitudes and partnering with the patient (Rush et al., 2005).

These findings resonate with the present study with relation to the activities facilitated during the Winter Slipstream weekends. For example, Hayley and Britney spoke of their experiences with the challenge course elements at Winter Slipstream. During this activity, participants were given the opportunity to work in teams to climb to a height of approximately 40 feet and to balance on a small platform with teammates. Hayley recalled being terrified of the task, but feeling comfortable enough to participate because of the trust she had in her peers. This is just one example of the trust building that occurred during activities at the Winter Slipstream weekends. Britney also spoke of the opportunity to participate in the challenge course activity at Winter Slipstream. She, unlike Hayley, decided to opt out of the challenge but described feeling supported in her decision and not pressured to venture too far outside of her comfort zone. I believe that this demonstrates the caring attitude of the group, similar to that described by Rush et al. (2005) as being important for effective role modeling. Finally, the concept of nurses working collaboratively with the patient, described as partnering, was suggested as important for effective role modeling (Rush et al., 2005). This was demonstrated through the emphasis on peer-based learning during the Winter Slipstream weekends. Hayley noted how, for her, "It's easier with someone you can talk to who is already on the pump and someone your own age and someone who has the same lifestyles as you" (May, 2010). Hayley went on to explain,

I know I can just pick up the phone and say I have a question for you: what do you think? What do you think my adjustment should be? Do you think this is a

good idea? Could you help me? That has been a huge learning experience for me. (May, 2010)

The peer-based learning described by Hayley functioned in the same way that partnering did in the Rush et al. (2005) study.

As mentioned previously, Rush et al. (2005) study reports that role modeling played a major role in a patient's value placed on health, self-acceptance and self-reflection practices. With reference to the present study, role modeling also played a role in the development of self-efficacy. Having effective role models, in this instance, role models who were living healthy and active lives with Type 1 diabetes, is another way that self-efficacy can be increased, according to Bandura (1971).

As described in Chapter Two, increased Type 1 diabetes self-efficacy can lead to improved glycemic control. Ritholz et al. (2007) reported that individuals with A1C levels below 7% described greater feelings of normalcy with relation to their peers without Type 1 diabetes when compared with individuals with higher A1C levels. This suggested that greater glycemic control could contribute to greater feelings of normalcy among individuals with Type 1 diabetes when compared to their peers. As such, the benefits for young adults with Type 1 diabetes of attending Connected in Motion's Winter Slipstream weekends were twofold. Participants were afforded a greater sense of normalcy, as discussed previously, which led to greater self-efficacy and ultimately greater glycemic control. Britney who stated, "I have definitely seen an increase in my control and my A1C has gone down after the months since Slipstream" (May, 2010), exemplified this. Similarly, Ritholz et al. (2007) findings report that greater glycemic

control would lead to greater feelings of normalcy and ultimately, improved self-efficacy.

The Recipe for Success as a Person with Type 1 Diabetes

There were several factors that recurred consistently throughout the reported lived experiences of the participants in the present study, as reported in Chapter Four. It is perhaps these factors that could be the most tangible and useful in terms of creating programs that provide the aspects of a successful experience as described through feelings of normalcy, creating a supportive community and achieving positive self-management practices. The ways in which these elements necessary for success could be implemented into programming for young adults with Type 1 diabetes are discussed subsequently in terms of implications for practice. Before addressing these implications, however, the factors necessary for success as a person with Type 1 diabetes, as reported by the participants in the present study, were discussed.

Throughout Chapter Four, several sub-themes emerged through the process of data analysis employed in this study. These sub-themes related to participants' feelings regarding the elements of the Winter Slipstream weekends that produced, for them, a successful experience. Participants spoke of factors including being in an active, outdoor focused environment; being surrounded by other young adults with Type 1 diabetes; being involved in experiences that mirrored those of their childhood; and learning experientially and informally. These factors are discussed below.

The idea that participant experience was successful based on the learning environment being centered around outdoor and physical activity related to the idea that, according to participants in the present study, alternative education opportunities for

individuals with chronic illness are not only very valuable to individuals with Type 1 diabetes, but also reach out to an audience much larger than do programs functioning from hospital and clinical settings. I believe that this is something that, perhaps, has been missed by many healthcare professionals responsible for providing effective education to individuals with chronic illness. For example, Von Korff, Glasgow and Sharpe (2002) discussed the elements necessary for patients with chronic illness. They reported that in order for effective education to take place, the following must be present:

(a) Collaboration between service providers and patients, (b) A personalized written care plan, (c) Tailored education in self management, (d) Planned follow up, (e) monitoring of outcome and adherence to treatment, (f) Targeted use of specialist consultation or referral and (f) Protocols for stepped care (Von Korff et al., 2002, p. 92)

Interestingly, nowhere in this list of necessary criteria for effective health education was the forum or environment in which this education is provided mentioned. The Task Force on Community Preventive Services (2002) extended Von Korff et al.'s (2002) research and specifically evaluated setting on the effectiveness of diabetes education in various settings. The Task Force found inconclusive evidence to support educational programming in camping settings for children or adolescents, but did not extend their review to include diabetes programming in a camp-like or peer-based setting for adults (The Task Force on Community Preventive Services, 2002). Interestingly, no conclusions at all were made regarding appropriate non-clinical settings diabetes education for adults (The Task Force on Community Preventive Services,

2002). The inconclusiveness was, perhaps, caused by an insufficient number of studies relating to non-clinical diabetes education and limitations in the study design of the few published studies. These findings are mirrored by several other studies in which educational setting is reported to have no bearing on the successfulness of the program, although many of these studies focus on a Type 2 diabetes population (Deakin, McShane, Cade & Williams, 2005; Loveman, Frampton & Clegg, 2008; Norris et al, 2002; Zabaleta & Forbes, 2007). The results from the present study extend the Task Force on Community Preventive Services' (2002) findings by suggesting that non-clinical, and in the case of the present study, outdoor adventure based environments play a role in providing effective healthcare to the young adult population.

Along with being in an outdoor environment, participants also spoke of the active nature of the weekend being a factor contributing to its success. This supported previous findings of Caulkins et al. (2006) who reported that physical activity experienced in an outdoor setting acts as a catalyst for behaviour change. Caulkins et al. (2006) investigated the role of physical activity in outdoor programming for specialized populations. More specifically, Caulkins et al. (2006) studied wilderness programming for at-risk women. Participant interviews, psychological profiles and observation were used to collect data (Caulkins et al., 2006). The study found that the physical activity associated with backpacking provided participants with time for self-reflection, a sense of accomplishment and perceived competence (Caulkins et al., 2006). Additionally, it was reported that the backpacking program promoted self-efficacy, feelings of timelessness, awareness of self, awareness of surroundings, and awareness of others (Caulkins et al., 2006). The programming specifically influenced participants'

cooperative behaviour (Caulkins et al., 2006). In the case of the present study, behaviour change related to Type 1 diabetes self-management behaviour. It would have, perhaps, been easier to forego the physical activity element within the Winter Slipstream programming, particularly because of the harsh winter climate in which the activities took place; however, not a single participant in this study spoke negatively of either the outdoor environment, or the weather.

According to participants in the present study, it was important that other individuals with Type 1 diabetes surrounded them. This community was necessary in ensuring a successful experience for many of the participants and related to Bandura's (1991) Social Cognitive Theory. Lorig et al.'s (1999) study, which Bandura co-authored, suggested that self-efficacy and self-management behaviours are influenced positively when individuals with the same chronic condition facilitate the individuals participating in health-focused programming. This finding relates to the present study in that the Winter Slipstream programming was facilitated for individuals with Type 1 diabetes, by individuals living with Type 1 diabetes. Although participants did not directly relate their appreciation for being in an exclusively Type 1 environment to increases in self-efficacy or self-management behaviour, it was described as a key component of the successful experience. For example, Hayley reported, "the outdoor experience mixed with being Type 1 diabetic and mixing with people my age with Type 1 diabetes allowed me to really open up and to really become confident with what I was doing" (May, 2010). The experiences of peer-to-peer interaction reported in the present study extended research presented by Heisler and Piette (2005) in which significant improvements in Type 1 diabetes self-efficacy and self-management were seen after the

implementation of a telephone based peer-to-peer interaction program for young adults with Type 1 diabetes. Heisler and Piette's (2005) research reports the great benefits of peer-to-peer diabetes interaction, benefits also seen through the present study.

With relation to Type 1 diabetes, Franklin, Greene, Waller, Greene and Pagliari (2008) caution against the possible dangers of peer-to-peer interaction. Franklin et al. (2008) recommend considering that unmediated peer-to-peer interaction could lead to the sharing of dangerous health practices. Although the Franklin et al. (2008) study focused only on online peer-to-peer interaction, I did consider this as a concern related to the Connected in Motion Winter Slipstream weekends. I believed, however, that once individuals reach young adulthood, they would be capable of making healthy decisions for themselves. There is a danger, as with any social setting, that individuals may be influenced by the negative health behaviours of their peers. One way that Connected in Motion had attempted to safeguard against this occurrence was through the participation of healthcare professionals who also happened to be living with Type 1 diabetes, in the organization's activities. As mentioned previously, Ashley, who was interviewed during this study, was both a Winter Slipstream participant and a registered nurse. This provides an example of how healthcare professionals were also included in the Winter Slipstream programming as participants, perhaps increasing the breadth of knowledge of the group as a whole.

The third factor that emerged as necessary for a successful experience was the relationship between the Winter Slipstream and childhood experiences. Several participants in the present study spoke of their experiences at Connected in Motion's Winter Slipstream weekends as being similar to experiences they had had as children. I

found this to be very interesting as it points to the idea that participants in the Winter Slipstream weekends were predisposed to enjoying outdoor physical activity, perhaps suggesting why participants reported this as being a factor necessary for ensuring a successful experience. When discussing their early influences related to outdoor and physical activity, the common themes of family involvement in outdoor pursuits, summer camp experiences and sport team participation emerged. For example, Hayley recalled her childhood camping experiences: “My sister, she’s several years older than me, so she and I would go off alone sometimes because she was older and could take me on her own and I also did a lot of stuff with my dad” (May, 2010). She explained that attending Winter Slipstream reminded her of these experiences. Emily also spoke of her outdoor experiences as a child recalling how she and her sister would spend the summers in British Columbia mountain biking and horseback riding. Britney spoke of Winter Slipstream reminding her of the summer camping trips she used to take as a child with her family. After ending her employment at the local summer camp for children with diabetes, Britney explained that she had really missed the outdoor experiences she had once had. This sub-theme suggested that an experience for young adults should be framed around the already established interests of the target group. In fact, much literature reports that early life experiences are the most influential factor in determining behaviour later in life (Friedman et al, 1993; Haan, Millsap & Hartka, 1986; Schwartz et al., 1995). Further, Halfon and Hochstein (2002) assert that early life influences have a major impact on health related outcomes later in life. This resonates with the present study as several of the participants interviewed discussed the outdoor– focused and physical activity–centred experiences of their childhoods and showed appreciation for

the structure of the Winter Slipstream weekends because the weekends mirrored their childhood experiences. Perhaps, the participants at the Winter Slipstream weekends were drawn towards the event, as it was something that fit well with their desired lifestyle. This is discussed subsequently with relation to implications for practice.

Experiential and informal learning emerged as an important factor in producing a successful experience for participants. Based on my own experiences with traditional Type 1 diabetes education, I believe that this sub-theme emerged as a result of the Winter Slipstream weekends being an alternative form of education from what most individuals had experienced in the past. From my experience, Type 1 diabetes education in Canada happens almost solely within the confines of the hospital clinic. In fact, before my own participation with Connected in Motion, the only opportunity I had had with non-clinical Type 1 diabetes education was through the summer camp I attended. I believe that I gained the majority of my knowledge about living with Type 1 diabetes experientially at summer camp; however, summer camps for children with Type 1 diabetes in Canada occur for only one to two weeks each summer and cater only to individuals between the ages of 8 and 15 (Ontario Camping Association, 2010b). Several participants in the present study shared similar experiences to those described above. As mentioned previously, one participant described the education happening in the hospital setting as “sterile”. Participants discussed the experiential and informal aspects of Type 1 diabetes education during interviews, as outlined below.

At Connected in Motion's Winter Slipstream weekend individuals were encouraged each other to try out new techniques to Type 1 diabetes management and to implement strategies that they may have been nervous to implement in the past without

support. Participants shared tips and tricks with one another, according to participant reports. Learning was collaborative and experiential. The success of this style of learning is supported by an experiential learning model developed by Kolb (1984). Kolb's (1984) model revolves around a cyclical learning process. According to the experiential learning model (Kolb, 1984), learning is enhanced through experience whereby an individual has an experience, observes and reflects, forms new abstract concepts and tests those concepts in a new situation. An individual can enter the cycle at any stage, so long as each of the four stages are completed (Kolb, 1984). Participants in Connected in Motion's Winter Slipstream weekends were given countless opportunities to complete the experiential learning cycle, as described above and as identified by participant reports in my study. The informal learning as described by several participants in the present study reflected aspects of Kolb's (1984) experiential learning model. For example, an idea that was repeated throughout participants reported lived experiences with Winter Slipstream, and one that emerged as an important sub-theme related to the learning that occurred through casual conversation with other participants. Through these conversations, individuals reported learning new tips and tricks –ones that they were able to try out during activities facilitated throughout the Winter Slipstream weekend. This represented the participant experiencing something new-often related to Type 1 diabetes management; observing and reflecting on how these new strategies could apply to their own lives; and testing out these new concepts in an environment in which participant felt the risk was significantly lower because of the surrounding support.

Interestingly, the importance placed on the informal and experiential form of education by participants contradicts the findings of Sigurdardottir, Jonsdottir and Benediktsson (2007) who assert that the delivery, teaching methods and content of diabetes education are not related to increased glucose control. The Sigurdardottir et al. (2007) study, however, focuses only on Type 2 diabetes education, which may provide insight into the differences presented in this study.

The Promotion of Personal Growth

The final overarching theme that emerged through this research was the promotion of personal growth that occurred through participation at Connected in Motion's Winter Slipstream weekends. Several participants spoke of the changes they experienced in their overall confidence. For example, Stefanie reported that seeing other people openly testing their blood sugars in public gave her "the confidence to just go out there and do it [herself]" (April, 2010). Additionally, Shondra reported,

I've tried so many activities first with Connected in Motion, like rock climbing and whatnot that I am now able to do those activities with other friends and with other groups with a bit more confidence that I might have otherwise had. (April, 2010)

Personal growth was reported throughout two sub-themes relating to positive change and learning about oneself. As reported in Chapter Four, participants discussed the negative feelings that they had once had with relation to Type 1 diabetes management and the ways in which these feelings had progressed into the confidence they felt at the time of the interview. Stefanie described her decision to try white water rafting following Winter Slipstream. She was hesitant to try white water rafting before

meeting her peers at Winter Slipstream in 2009 but through meeting other individuals who had had similar experiences to what she wanted to try, she felt more confident in her decision to not let Type 1 diabetes hold her back. She explained,

There were just so many things that could go wrong, but I felt like so many other people have done so many other even crazier and wilder things that going out on a raft for the afternoon was not the biggest challenge... it gave me the confidence and the feeling that I could try new things. (Stefanie, April, 2010)

This progression of confidence resonates with several studies from the body of relevant literature, regarding increased self-efficacy with relation to Type 1 diabetes. As presented in Chapter Two, Hill-Briggs (2003) reported that increased confidence in one's problem-solving skills could lead to increased glycemic control among individuals with Type 1 diabetes. Connected in Motion's Winter Slipstream weekend provided ample opportunity for individuals to develop problem-solving skills, thus encouraging mastery experience, which, as discussed previously, is one recommended way to increase self-efficacy (Bandura, 1971). Many participants at Winter Slipstream experienced Type 1 diabetes management in novel situations. Stefanie described her experiences trying new activities at Winter Slipstream 2009. She explained that she got to try "new things that are maybe a bit out of [her] comfort zone, like cross-country skiing" (Stefanie, April, 2010). She went on to describe how she had felt encouraged to problem solve and try new strategies for blood glucose management during activities. She explained, that her peers were there "giving ideas about how to control your blood sugars through different activities." Hayley recalled a similar experience. She learned things "like how to use [her] pump in certain situations" (Hayley, May, 2010). Ashley provided a specific

example of employing problem-solving skills: "While at the Connected in Motion weekend, it was mentioned to me to try a combo bolus" (April, 2010). After trying a combo bolus during one of the meals at Winter Slipstream 2010, Ashley recalled, "I found I wasn't getting the spike" (April, 2010). Overall, participation in novel activities required problem solving to balance food intake, exercise and insulin adjustment.

As individuals were faced with new challenges, they were also presented with the opportunity to master these new challenges and, thus, to increase self-efficacy. Additionally, Gilman, Huebner and Furlong (2009) describe a person with high self-efficacy as being one that would "approach difficult tasks as challenges to be mastered rather than as threats to be avoided" (p. 152). Based on this premise, the participants in the present study, having described marked increases in self-efficacy/confidence, were likely to continue this positive trend of increasing efficacy as they continued to take on new and seemingly difficult challenges. For example, Shondra recalled her feelings after leaving Winter Slipstream in 2009: "I did feel more confident simply because of my talking to people and hearing their suggestions and knowing that I had perhaps tried those out or being able to give different tips to people made me feel more confident" (April, 2010). Winter Slipstream provided many opportunities for mastery experience, verbal persuasion, vicarious experience and positive affective states (Bandura, 1977; 1982; 1994), each of which are reported to increase self-efficacy and of which could have initiated opportunity for further increases in efficacy through ongoing participation in novel and challenging activities.

In summary, the present study not only provided support for the existing literature related to Type 1 diabetes education, but also served to extend the relevant

literature through examples and reported experiences. Before discussing the implications that the findings of the present study have for theory, practice and future studies, the language employed by the participants in the present study will first be outlined to allow the reader to better understand the participants involved in this study with relation to the broader community of individuals living with and interested in Type 1 diabetes.

Language Usage

Throughout this study, I found the language that participants used to discuss various aspects of life with Type 1 diabetes both interesting and perplexing. Throughout the interviews, participants used language that, based on both the review of Type 1 diabetes related literature and my own experiences as a person with Type 1 diabetes, I had learned was wrong. This occurrence made me question the literature and the experiences I had had which led me to make this judgment. I questioned who owned the authority to determine the language that a woman may use to identify herself within North American society and to decide which language a person may use to describe Type 1 diabetes management. Below, I outline the most prominent instance in which participants used language that diverted from what the Type 1 diabetes literature deemed appropriate.

Person with Diabetes versus Diabetic

In 1987, the Research and Training Center on Independent Living released a publication entitled *The Guidelines for Reporting and Writing about People with Disabilities*. Shortly following the publication of these guidelines, in 1990, the title of the Education of the Handicapped Act was legally changed to reflect this new person

first language (Walsh, 1990). The law was re-entitled the Individuals with Disability Act (Walsh, 1990). By as early as 1991, it had become required among many professional journals and pre-service teacher training programs that person first language be used in all communications (Blaska, 1993). As such, throughout my writing, I have made a conscious effort to use person first language in referring to people with diabetes—an act that does not come naturally to me as a diabetic.

In October 2009, I attended the International Diabetes Federation World Diabetes Congress as a delegate of the Living with Diabetes stream of presentations. During one presentation, a distinguished presenter who happened to be living with Type 1 diabetes referred to himself as a diabetic. The session chair abruptly stopped the presentation and the man was scolded for using the "inappropriate term". The incident produced a short-lived but lively outbreak of chatter among the session attendees. Although I recognized that the chair had been trying to promote the use of person first language during the session, I felt that it was wrong for him to have scolded the presenter for choosing to distinguish himself using disability-first language, an interesting change instigated by people with disability in which these individuals "are increasingly adopting disability as an identity characteristic that is embraced" (Mackelprang, 2010, p. 89).

Throughout my interviews, participants referred to themselves 40 times as being diabetic, compared to only six times as a person with Type 1 diabetes. I found this very interesting, as it seemed to contradict the societal norms relating to the use of person first language (Mackelprang, 2010). I was presented with a conundrum. It was clear that five of the six participants preferred the use of the term diabetic, as do I. I also respect, however, that it is the standard of professional writing to use person first language in the

reporting of and discussion of results (Blaska, 1993). Throughout this study, both the terms person with Type 1 diabetes and diabetic were used; however, much care and consideration went into the use of both identifiers. When presenting direct quotations I, naturally, maintained the language style preference of the participants. When paraphrasing, I respected the standard of using person first language.

Type 1 Diabetes Control

It is also worth mentioning that, along with the use of the term diabetic, participants also spoke repeatedly of Type 1 diabetes *control* and of *being okay*. I found both of these terms very interesting and struggled with them when it came time to discuss the findings of this study. The term control, with relation to Type 1 diabetes, has been a hot topic of debate throughout Type 1 diabetes communities. It is something that I began to take interest in two years ago, when a friend and diabetes educator brought up the issue of implications of the use of the term control to me. It was suggested that using the term control when discussing the goals of diabetes management could actually be damaging to the psychological welfare of people living with Type 1 diabetes. It was implied that a person with Type 1 diabetes cannot control the disease at all, and instead, can only attempt to manage the many factors that influence Type 1 diabetes. Instead of attempting to control blood glucose levels, many diabetes educators are advocating for a shift towards encouraging the use of the term influence (Whiting, 2010). Interestingly, despite this call for change by individuals living with Type 1 diabetes, the concept of diabetes control was discussed throughout nearly all of the literature surrounding Type 1 diabetes reviewed for this study. As such, throughout the literature review included in this study, the term control was used to reflect the language used throughout the

published studies. When discussing the findings of the present study, I attempted to, whenever possible, use terms such as manage and influence to reflect what had previously been referred to as control.

Doing Okay

I found it very interesting that participants spoke of the benefits of knowing that they were doing okay with relation to Type 1 diabetes management and health living. The fact that several participants used this term instead of saying, for instance, that they were doing *well* or were doing *great* represented the varied views that people with Type 1 diabetes have regarding living with the disease. For example, my view was that 25 young adults with Type 1 diabetes coming together to take part in active winter adventure activities (as was the case during Connected in Motion's Winter Slipstream) was a demonstration that those individuals were excelling at not only managing their Type 1 diabetes, but at living overall healthy lives. I never would have thought that they were doing just okay. To me, these differing views are a result of the varied Type 1 diabetes education and overall experiences as individuals with Type 1 diabetes.

Diabetes Type Prefix Usage

Finally, throughout the reporting of these results and in this discussion of the findings, I made a conscious effort to attach the prefix Type 1 whenever appropriate when discussing this type of diabetes. Throughout the media and academic publications, the use of the prefixes differentiating the various types of diabetes is often neglected. In fact, recent articles published in the New York Times (Perez-Pena, 2006), the Globe and Mail (Barton, 2011), Chicago Tribune (Deardorff, 2010) and the Toronto Star (Weikle, 2010) have questioned the lack of differentiation between the two diseases. I believe

that this lack of differentiation only adds to the misinformation and confusion surrounding the various types of diabetes. In order to make my reporting and discussion and accurate and straightforward as possible, I used the prefix Type 1 whenever appropriate. I hope that the use of the Type prefix with reference to diabetes will become more consistent throughout the media and academic writing and believe that this simple act will be one step forward in helping the general public to recognize the differences between the various Types of diabetes.

Relating it Back

After deductively sorting the data collected through this study into the broad categories created by my four research questions, it was clear that many of the overarching themes that emerged in this study answered the questions used to guide it. The following section provides a brief discussion into these answers and an integration of the related relevant literature.

The first research question that guided this study was “What influence do outdoor experiences have in the development of self-efficacy and autonomy among young adults (18-30 years of age) with Type 1 diabetes in Canada?” As described in Chapter Four, participants involved in the present study reported that the outdoor experiences they took part in during Winter Slipstream 2009 and 2010 significantly impacted their self-efficacy, but there were no reports of any major development of autonomy.

Self-efficacy Development

Participants spoke of several factors relating to outdoor experiences that created an environment suitable for self-efficacy development. In fact, several participants

explicitly reported that simply being in the outdoors fostered an environment that promoted personal growth and a sense of community. In a recent study by Breunig, O'Connell, Todd, Anderson and Young (2010), individuals reported an increased perceived sense of community following participation in an outdoor pursuits program. As a result of that study, individuals reported that various factors including group-oriented activities, challenges, meeting new people and sharing common goals contributed to greater feelings of community among the group. Participants in the present study reported many similar attributes leading to the development of community. For example, with regards to group-oriented activities (snowshoeing and cross-country skiing, in particular), Britney described that, as a result of her participation in Connected in Motion's outdoor experiences, she now "know[s] that if [she] had a group of people to go out there with, [she] could do it" (May, 2010). Several examples supporting the importance of challenges, meeting new people and sharing common goals to the creation of community were presented in Chapter Four. In addition to these factors, participants in the present study also spoke explicitly about how being outdoors served as a catalyst for community development.

The creation of community through outdoor pursuits, as described by participants, created an environment in which self-efficacy could be developed. This trend is seen throughout the self-efficacy literature. For example, Tschannen-Moran and Hoy (2007) found that new teachers experienced the greatest self-efficacy gains when working in an environment with a high sense of community values. Goodwin and Staples (2005) found similar results when studying youth with disabilities attending summer camps.

Overall, the results of this study provide further evidence that outdoor experiences influence the development of self-efficacy among individuals with Type 1 diabetes between the ages of 18 and 30. The specific aspects of the outdoor experience that were found to foster self-efficacy development are outlined subsequently with regards to the practical implications of this research.

Autonomy Development

Upon review of the literature presented in Chapter Two, it is not a great surprise to me that participants did not report any significant gains in autonomy following participation in the outdoor experiences facilitated by Connected in Motion at the Winter Slipstream weekends. In fact, Williams et al., (2004) reported that an autonomous person has high levels of initiative, self-directedness and skill mastery. Upon reviewing the literature relevant to my findings, it now seems obvious to me that any individual taking the initiative to find out more information about, and to register for, a Winter Slipstream weekend with Connected in Motion might exhibit self-directive behaviours and might have a fairly high level of autonomy, pre-program.

Hoare (1984) conducted a study, however, that investigated the differences in independence levels among children with diabetes and their peers without the disease. No differences in dependence levels were found (Hoare, 1984). This finding contradicts what several of the participants in the present study reported. For example, Stefanie reported, "I think that [having diabetes] made me mature a lot faster and really think about all of my actions" (April, 2010) suggesting that Stefanie believed herself to be more independent at a young age because of her Type 1 diabetes, when compared with her peers.

In summary, the present study did not find any direct relation between outdoor experience and autonomy development among individuals with Type 1 diabetes between the ages of 18 and 30. It is my belief that individuals who choose to participate in outdoor experiences, such as Winter Slipstream, may already possess a high level of autonomy. I believe that this finding does not suggest that outdoor experience does not promote autonomy, but that, perhaps, outdoor experiences themselves attract an already somewhat autonomous group of individuals.

The second research question that guided this study was “How might the development of self-efficacy and autonomy affect diabetes management in young adults with Type 1 diabetes in Canada?” As reported in Chapter Four, there are several ways in which the development of self-efficacy affects diabetes management in young adults with Type 1 diabetes. Most prevalently reported among these was breaking free from negative and dangerous cycles. As was described with regards to research question one, very little information emerged regarding the influence of autonomy on diabetes self-management behaviours.

Cycles and Circles

As reported by participants in the present study, breaking free from the negative cycles related to diabetes self-management occurred because of increased self-efficacy and autonomy. As described previously, one method individuals may use for breaking free from negative cycles, especially with relation to chronic illness, is through taking psychological ownership over a disease (King et al., 2003). Avey, Avolio, Crossley and Luthans (2009) report that there are four factors that influence psychological ownership including self-efficacy, accountability, sense of belongingness and self-identity. Self-

efficacy, therefore, contributes to increased diabetes self-management through the promotion of psychological ownership.

The third research question that guided this study was “Is the nature of outdoor experience influential in the development of autonomy and/or self-efficacy among young adults with Type 1 diabetes in Canada?” Participants in the present study reported, overwhelmingly, that the nature of the outdoor experience significantly impacted their development of self-efficacy as well as their diabetes self-management. As stated above, no specific findings emerged relating to outdoor experience and autonomy. Overall, an outdoor experience that provides a heightened sense of community and a focus on experiential and informal learning fostered the greatest self-efficacy.

Community

According to my study’s results, community was found to be one of the most important aspects of the nature of outdoor experiences when considering the development of self-efficacy. The role of community in the development of self-efficacy has been outlined previously with regards to the first research question.

Informal Learning

Informal learning was important to participants with regards to developing self-efficacy. Participants reported that the experiential learning style, which is often, by nature, informal (especially when compared to traditional, classroom learning), was important in terms of gaining confidence in new skills and abilities. This is not a novel concept. In fact, informal learning is used throughout camps for children with chronic

illness and has been shown to increase campers' self-efficacy, specifically related to their abilities to self-manage their disease (Melman & Sanders, 1986; Gerson, 1999).

The final research question that guided this study was: "Does participation in the non-profit organization Connected in Motion's outdoor events influence the development of self-efficacy and autonomy in young adults with Type 1 diabetes?" As with question three, the responses collected from participants were overwhelmingly positive with regards to this research question. Participants spoke specifically of trying new things and improving diabetes self-management.

Connected in Motion's Winter Slipstream weekends were shown to greatly influence several of the participants' confidence in trying new activities and improving diabetes self-management. Several examples of these reports were described in Chapter Four. Participants specifically spoke of feeling confident enough to try new activities, such as white water rafting and rock climbing, following their participation in Connected in Motion's Winter Slipstream weekends. I believe that this, again, can be attributed to the sense of community that was created at Winter Slipstream. Participants also reported increases in diabetes self-management following their participation in Winter Slipstream. Again, I believe that this can be attributed to the community that was developed through the Winter Slipstream weekends as previously discussed.

As is evident from the above discussion, one of the most important roles that Connected in Motion plays is bringing together peers to form a community of people with Type 1 diabetes. Throughout the literature, the role of peers in diabetes self-management is extensive. Specifically, peer support has been shown to assist in positive behaviour and lifestyle change (Heisler, 2006; Joseph, Griffin, Hall & Sullivan, 2001;

Sarkisian, Brown, Norris, Wintz & Mangione, 2003; Sullivan & Joseph, 2000). Peer based programs have been shown to directly influence diabetes self-efficacy, which in turn influences diabetes self-management behaviour (Krichbaum, Aarestad & Gbueth, 2003).

In summary, the results from the present study suggest that participation in Connected in Motion's Winter Slipstream programs positively influenced self-efficacy. This occurred as a result of the building of a peer-based community. Connected in Motion's programs were not found to impact significantly the autonomy of individuals living with Type 1 diabetes and instead, as mentioned previously, allowed for individuals to step away from the independent lifestyles to which they were accustomed.

Implications for Practice

Numerous implications for practice can be identified when the results from this present study are integrated with the previous literature. The following outlines the recommended elements necessary for successful alternative Type 1 diabetes education programming as developed through the findings of the present research. The situations in which alternative Type 1 diabetes education programming would be most beneficial are also suggested, along with the expected outcomes of implementing this type of program for young adults with Type 1 diabetes.

The present study served to extend the literature surrounding this underserved population by providing further insight into the unique needs of young adults with Type 1 diabetes. Specifically, this research was important in advancing the body of knowledge associated with Type 1 diabetes self-management practices and the development of community for a population often overlooked in terms of effective

healthcare. As Hayley stated, Connected in Motion's Winter Slipstream weekends are "something that has been missing in the diabetes community" (May, 2010). The findings of this study may serve to fill that gap.

There are several ways in which these findings can benefit programming for young adults with Type 1 diabetes. Through consulting the community-focused findings presented in the present study, healthcare professionals and diabetes programmers will find several elements suggested for a successful alternative/non-clinical educational programming for young adults with Type 1 diabetes. Through my analysis of the results of the present study, I believe these elements to be as follows:

- Participants should be given the opportunity to interact with individuals in a similar age range.
- Participants should have Type 1 diabetes.
- Activities should cater to a wide range of interests.
- Programs should encourage participants to be physically active.
- Consideration should be given to hosting programs in novel, non-clinical environments.
- Majority of learning should happen experientially and informally.

Along with these program elements and based on the findings from the present research, I believe that it is also important that alternative diabetes education programs create a non-judgmental, open and sharing environment in which participants feel safe and supported in their choices. Alternative diabetes education programs should aim to set participants up for success. This may be achieved through ensuring that participants have choice in not only the activities provided, but in their involvement within these

activities. Alternate diabetes education programs should also foster supportive relationships and sustainable networks of individuals that may be used as a resource and for support outside of the program.

The findings of the present study provide recommendations as to the situations in which this type of programming would provide the greatest benefit for young adults with Type 1 diabetes. Both Hayley and Emily spoke of the negative and dangerous cycles they had fallen into in terms of their diabetes management prior to attending Connected in Motion's Winter Slipstream weekends. They spoke of how their experiences at Winter Slipstream had helped them break free from these negative cycles. Based on these reports, I would assert that alternative Type 1 diabetes education programming comprised of the aforementioned elements be provided for young adults who have expressed difficulty in managing their Type 1 diabetes on their own. Individuals who have experienced the negative cycles as mentioned by Hayley and Emily might be greatly influenced and find the resources they need to break from these cycles through participation in alternative Type 1 diabetes education.

Furthermore, individuals who are experiencing difficulties with aspects of Type 1 diabetes management, particularly with glycemic control, may find benefit in alternative Type 1 diabetes education programming. Through alternative programming, I believe that individuals may experience new ways of Type 1 diabetes management, may be introduced to new Type 1 diabetes technology, and may find comfort in sharing their experiences with other individuals who have lived through it too. Especially for young adults who were diagnosed with Type 1 diabetes as children and have experienced transition from pediatric to adult diabetes care, young adults struggling with their current

healthcare may welcome alternative Type 1 diabetes education programming, particularly programming that shares some of the characteristics of pediatric care.

Several other outcomes of alternative Type 1 diabetes education programming, as described above, exist. Along with providing opportunity for self-management practice, peer-to-peer networking and experiential Type 1 diabetes education, based on the findings of the present research, alternative Type 1 diabetes education programs also provide an opportunity for individuals to challenge an outsider's perception of a person with Type 1 diabetes and ultimately redefine what it means to be a person living with Type 1 diabetes to the general public. Through my own experience, the general public cannot differentiate between Type 1 and Type 2 diabetes. Most individuals believe all forms of diabetes to be caused by lifestyle choices, particularly poor diet and inactivity. Not surprisingly, this can have a major impact on individuals living with Type 1 diabetes. It is not uncommon to hear, upon someone learning that you have Type 1 diabetes, "You don't look like you have diabetes" or "Can you eat that?" It was not surprising to me to learn that participants involved in the present research valued the opportunity to be able to redefine what it means to be diabetic. Providing opportunities to engage young adults with Type 1 diabetes in alternative Type 1 diabetes education programs, especially ones involving physical activity and outdoor experience allows those individuals to, essentially, redefine the identity of someone with Type 1 diabetes.

Implications for Theory

There is a need for literature surrounding the complex needs of the underserved population of young adults with Type 1 diabetes in Canada. Furthermore, literature surrounding both the benefits of experiential Type 1 diabetes education programming as

well as the elements necessary for creating successful experiential Type 1 diabetes programs within North America is severely lacking. The present study has both confirmed and extended several aspects of Bandura's Social Cognitive Theory, specifically with regards to reciprocal determination. The present findings confirm that, as suggested by Bandura (1978), human behaviour, personal factors and environment all reciprocally influence each other to create an experience. Behaviour, including physical activity participation and Type 1 diabetes management, was both a result of and an influencing factor in the creation of the Winter Slipstream environment and the personal factors of both the individuals involved and the entire group as a whole; just as the personal factors of the individuals and the group both influenced and were influenced by the Winter Slipstream environment. More specifically, the supportive, caring and open environment described by participants was not only influenced by the concept of what it means to be a young adult living with Type 1 diabetes, by the belief that Type 1 diabetes education can happen outside of a clinical environment and by the self-perceptions of the individuals in attendance, but these concepts, beliefs and self-perceptions also shaped the environment at Winter Slipstream.

To extend Bandura's (1978) Social Cognitive Theory, specifically the concept of reciprocal determination, the present findings report that in addition to the personal factors suggested by Bandura—conceptions, self-perception and beliefs—other non-cognitive personal factors including participant age, personal interests and openness to novel situations may also play an important role in the creation of a social experience. Hayley reported, "It's easier with someone you can talk to who is already on the pump and someone your own age and someone who has the same lifestyles as you" (May,

2010). She went on to describe how these factors helped in creating the supportive environment she experienced at Winter Slipstream.

Implications for Further Research

Future studies could serve to extend the present research in many ways and could provide further support for alternative forms of Type 1 diabetes education. Future studies could also serve to extend the limited body of research relating specifically to young adults living with Type 1 diabetes. Recommendations for future study are discussed below.

Future studies could expand on this research by varying the study site, length and location of the outdoor experience. Since the commencement of the present research, Connected in Motion has provided programming for young adults with Type 1 diabetes in a variety of formats and locations. During the summer of 2010, Connected in Motion facilitated a 3-day canoe trip program. Studying the role of a wilderness environment in the development of character as well as its role in providing experiential Type 1 diabetes education could provide further support for, and an extension of the criteria necessary for a successful experiential Type 1 diabetes education program, as created through the present study. Connected in Motion also facilitated several single-day, 2-day, 3-day and 4-day hiking expeditions in the Rocky Mountains of Alberta and Coastal Mountain Range of British Columbia in 2010. Future studies could investigate the connection between the length of the outdoor experience, character development and diabetes management.

It would also be of value to vary the populations studied in future studies (e.g., recruiting participants from Type 1 diabetes clinics instead of limiting participation to

those involved in Connected in Motion events). This may produce a greater wealth of information in terms of participant demographics, although this data would not be specific to peoples' participation in outdoor experiences. Additionally, future studies could apply the recommended criteria presented in the present study to programming for groups of adults (in comparison to young adults) as well as to groups of adolescents.

. Further, future research could include observations of participants taking part in outdoor experiences and assess whether these changes affect the development of character. It would also be interesting to conduct a study, which measured participant's glycemic control through A1C testing pre- and post-experience

Interestingly, it has been shown that most short-term outdoor programs provide only short-term behaviour change (Hattie et al., 1997; Fan and Sidani, 2009).

Participants in my study reported behaviour change during their interviews, which occurred three to four months following the most recent Winter Slipstream weekend. It would be interesting to study the behaviour change of participants longitudinally.

Finally, development of character through outdoor experience is not unique to a diabetic population. It would be interesting to investigate the effects of outdoor experience on a group of young adults without Type 1 diabetes, or perhaps those living with other challenges and diseases.

Final Word

There is no doubt that Type 1 diabetes education is a vital component in diabetes management. The lifelong challenges associated with the disease can be managed efficiently with the proper education; however, that education does not need to happen in the often-sterile hospital environment as has become the norm throughout North

America. In the words of Hayley, "Connected in Motion was something that was missing in the diabetes community" (May, 2010). The idea of alternative Type 1 diabetes education program has potential for amazing growth within the Type 1 diabetes community and I believe that the momentum of this experiential initiative will only grow from here.

References

- Aalto, A. M., Uutela, A., & Aro, A. R. (2000). Disease-related distress among insulin-treated diabetic patients associations with health status, psychosocial factors and self-care practices. *European Journal of Public Health*, 10(1), 68.
- Acerini, C. L., Cheetham, T. D., & Edge, J. A. (2000). Both insulin sensitivity and insulin clearance in children and young adults with type I (insulin-dependent) diabetes vary with growth hormone concentrations and with age. *Diabetologia*, 43(1), 61.
- Acharya, S. H., Philip, S., Viswanath, A. K., Boroujerdi, M., Waugh, N. R., & Pearson, D. W. M. (2008). Glycaemic control and body mass index in late-adolescents and young adults with type 1 diabetes mellitus: A population-based study. *Diabetic Medicine*, 25(3), 360.
- Adams, H. (2008). *Justice for Children*. New York, NY: State of New York University Press.
- Adler P. A., & Adler, P. (2008). Of rhetoric and representation: The four faces of ethnography. *Sociological Quarterly*, 49(1), 1-30.
- Ahern, K. (1999). Ten tips for reflexive bracketing. *Qualitative Health Research*, 9(3), 407- 411.
- Altheide, D. L., & Johnson, J. M. (1994). Criteria for assessing interpretive validity in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research*. Thousand Oaks, CA: Sage.
- American Diabetes Association (2009). *Diabetes Information*. Retrieved from <http://www.diabetes.org/type-1-diabetes.jsp>

- Anderson, B. J., & Wolpert, H. A. (2004). A developmental perspective on the challenges of diabetes education and care during the young adult period. *Patient Education and Counseling*, 53(3), 347.
- Anderson, R. J., Freedland, K. E., Clouse, R. E., & Lustman, P. J. (2001). The prevalence of co morbid depression in adults with diabetes. *Diabetes Care*, 24(6), 1069.
- Armstrong, K. H., Dedrick, R. F., & Greenbaum, P. E. (2003). Factors associated with community adjustment of young adults with serious emotional disturbance: A longitudinal analysis. *Journal of Emotional and Behavioral Disorders*, 11(2), 66.
- Ashwell, S. G., Amiel, S. A., Bilous, R. W., Dashora, U., Heller, S. R., Hepburn, D. A., ... & Home, P. D. (2006). Improved glycaemic control with insulin glargine plus insulin lispro: a multicentre, randomized, cross-over trial in people with Type 1 diabetes. *Diabetic Magazine*, 23, 285-292.
- Astrup, A., & Finer, N. (2000). Redefining type 2 diabetes: 'diabesity' or 'obesity dependent diabetes mellitus'? *Obesity Reviews*, 1(2), 57.
- Auerbach, C.F., & Silverstein, L.B. (2003). *Qualitative data: An introduction to coding and analysis*. New York, NY: New York University Press.
- Avey, J.B., Avolio, B. J., Crossley, C. D., & Luthans, F. (2009). Psychological ownership: Theoretical extensions, measurement and relation to work outcomes. *Journal of Organizational Behavior*, 30, 173-191.
- Balfé, M., & Jackson, P. (2007). Technologies, diabetes and the student body. *Health Place*, 13(4), 775.

- Balfe, M. (2009). Healthcare routines of university students with type 1 diabetes. *Journal of Advanced Nursing*, 65(10), 128-139.
- Bandura, A. (1971). *Psychological modeling: Conflicting theories*. New Brunswick, NJ: Aldine Transaction.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191.
- Bandura, A. (1978). A self-system in reciprocal determinism. *American Psychologist*, 33(4), 333-358.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1991). Self-efficacy mechanism in physiological activation and health promoting behaviour. In J. Madden, IV (Ed.), *Neurobiology of learning, emotion and affect*. 229-270. New York, NY: Raven.
- Bandura, A. (1994). Self-efficacy. In R. J. Corsini (Ed.), *Encyclopedia of psychology*. New York, NY: Wiley.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Barnett, A. (2006). Insulin glargine in the treatment of type 1 and type 2 diabetes. *Vascular Health and Risk Management*, 2(1), 59.
- Barton, A. (2011, January 2). Wanted: A new name for Type 1 diabetes. *The Globe and Mail*. Retrieved from <http://www.theglobeandmail.com/life/health/wanted-a-new-name-for-type-1-diabetes/article1854455/>

- Battelino, T. (2009). Prolonged use of continuous glucose monitoring: Kids do not listen-says who? *Pediatric Diabetes*, 10(2), 89.
- Bekker, M. H. J., & Van Assen, M. A. L. M. (2006). A short form of the Autonomy Scale: Properties of the Autonomy-Connectedness Scale (ACS-30). *Journal of Personality Assessment*, 86, 51-60.
- Berg, B. L. (2004). *Qualitative Research Methods for the Social Sciences (5th ed.)* Boston, MA: Pearson.
- Berkowitz, M. W., & Bier, M. C. (2004). Research-based character education. *Annals of the American Academy of Political and Social Science*, 591(1), 72.
- Bishop, F. K., Maahs, D. M., Spiegel, G., Owen, D., Klingensmith, G. J., Bortsov, A., Mayer-Davis, E. J. (2009). The carbohydrate counting in adolescents with type 1 diabetes (CCAT) study. *Diabetes Spectrum*, 22(1), 56.
- Blanchard, L. V., & Schriber, C. (1999). *Latin Word List*. Retrieved from <http://www.the-orb.net/latwords.html>
- Blanz, B. J., Rensch-Riemann, B. S., Fritz-Sigmund, D. I., & Schmidt, M. H. (1993). IDDM is a risk factor for adolescent psychiatric disorders. *Diabetes Care*, 16(12), 1579.
- Blaska, J. (1993). The power of language: Speak and write using "person" first. In M. Nagler (Ed.), *Perspectives on disability*. Palo Alto, CA: Health Markets Research.
- Bless, C., & Higson-Smith, C. (2000). *Fundamentals of social research methods, an African perspective (3rd ed.)*. Lansdowne, South Africa: Juta.
- Blum, D. (1998). Finding the strength to overcome anything. *Psychology Today*, 32-72.

- Boeije, H. (2002). A purposeful approach to the constant comparative method in the analysis of qualitative interviews. *Quality and Quantity*, 36, 391-409.
- Boileau, P., Aboumrad, B., & Bougneres, P. (2006). Recurrent comas due to secret self-administration of insulin in adolescents with Type 1 diabetes. *Diabetes Care*, 29(2), 430-431.
- Boland, E., Grey, M., Oesterle, A., Fredrickson, L. & Tamborlane, W. (1999). Continuous subcutaneous insulin infusion: A new way to lower risk of severe hypoglycemia, improve metabolic control and enhance coping in adolescents with Type 1 diabetes. *Diabetes Care*, 22, 1779-1784.
- Borchardt, G. L. (2000). Role models for health promotion: The challenge for nurses. *Nursing Forum*, 35, 29-32.
- Brendle, T. A. (2010). Preventing surgically induced diabetes after total pancreatectomy via autologous islet cell reimplantation. *AORN*, 92(2), 169-184.
- Breunig, M., O'Connell, T., Todd, S., Anderson, L., & Young, A. (2010). The impact of outdoor pursuits on college students' perceived sense of community. *Journal of Leisure Research*, 42(4), 551-572.
- Breunig, M., O'Connell, T., Todd, S., Young, A., Anderson, L., & Anderson, D. (2008). Psychological sense of community and group cohesion on wilderness trips. *Journal of Experiential Education*, 30, 258-261.
- Brock University Research Ethics Board (2010). *Office of Research Services*. Retrieved from <http://www.brocku.ca/research>

- Brookman, L., Boettcher, M., Klein, E., Openden, D., Koegel, R. L., & Koegel, L. K. (2003). Facilitating social interactions in a community summer camp setting for children with autism. *Journal of Positive Behavior Interventions*, 5(4), 249-252.
- Brooks-Worrell, B. M., & Palmer, J. P. (2011). Latent Autoimmune Diabetes in Adults. *Contemporary Endocrinology*, 3, 315-329.
- Bruttomesso, D., Crazzolara, D., Maran, A., Costa, S., Dal Pos, M., Girelli, A., ... Baritussio, A. (2007). In Type 1 diabetic patients with good glycaemic control, blood glucose variability is lower during continuous subcutaneous insulin infusion than during multiple daily injections with insulin glargine. *Diabetic Medicine*, 25, 326-332.
- Bryden, K. S., Peveler, R. C., Stein, A., Neil, A., Mayou, R. A., & Dunger, D. B. (2001). Clinical and psychological course of diabetes from adolescence to young adulthood. *Diabetes Care*, 24, 1536-1540.
- Buckloh, L. M., Lochrie, A. S., Antal, H., Milkes, A., Canas, A., Hutchinson, S., & Wysocki, T. (2008). Diabetes complications in youth: Qualitative analysis of parents' perspectives of family learning and knowledge. *Diabetes Care*, 31(8), 1516.
- Canadian Diabetes Association (2009). Type 1 diabetes: The basics. Retrieved from <http://www.diabetes.ca/about-diabetes/living/just-diagnosed/type1/>
- Canadian Mental Health Association (2009). *Effects of depression and anxiety on Canadian society*. Retrieved from http://www.cmha.ca/bins/content_page.asp?cid=5-34-183&lang=1
- Caplan, G. (1974). *Support systems and community mental health: Lectures on concept development*. Padadena, CA: Behavioral Publications.

- Caulkins, M. C., White, D. D., & Russell, K. C. (2006). The role of physical exercise in wilderness therapy for troubled adolescent women. *The Journal of Experiential Education*, 29(1), 18.
- Centre for Disease Control and Prevention (2009). *Diabetes and me – Learn about diabetes – Diabetes problems*. Retrieved from <http://www.cdc.gov/diabetes/consumer/diabproblems.htm>
- Chen, R., Ben-Haroush, A., Weissmann-Brenner, A., Melamed, N., Hod, M., & Yogev, Y. (2007). Level of glycemic control and pregnancy outcome in type 1 diabetes: A comparison between multiple daily insulin injections and continuous subcutaneous insulin infusions. *American Journal of Obstetrics and Gynecology*, 197(4), 404.
- Children with Diabetes (2009). *Children with diabetes online community*. Retrieved from <http://www.childrenwithdiabetes.com>
- Clark, A. C. (1991). Nurses as role models and health educators. *Journal of Advanced Nursing*, 16, 1178-1184.
- Clark-Ibanez, M. (2004). *Framing the social world with photo-elicitation interviews*. *American Behavioral Scientist*, 47, 1507-1529.
- Colaizzi, P. (1978). Psychological research as the phenomenologist views it. In R. Valale & M. King, (Eds.), *Existential Phenomenological Alternatives for Psychology*. New York, NY: Oxford University Press.
- Connected in Motion (2009). *Our Mission*. Retrieved from http://www.connectedinmotion.ca/index.php?option=com_content&view=article&id=60&Itemid=59

- Dahlbeck, D. T. , & Lightsey, O. R. (2008). Generalized self-efficacy, coping, and self-esteem as predictors of psychological adjustment among children with disabilities or chronic illnesses. *Children's Health Care*, 37(4), 293.
- Daneman, D. (2006). Type 1 diabetes. *The Lancet*, 367(9513), 847.
- Davis, A. H. T., Carrieri-Kohlman, V., Janson, S. L., Gold, W., & Stulbarg, M. S. (2006). Effects of treatment on two types of self-efficacy in people with chronic obstructive pulmonary disease. *Journal of Pain and Symptom Management*, 32(1), 60.
- Davis, W. G. (1973). *Social Relations in a Philippine Market*. Berkeley, CA: Center for South And Southeast Asia Studies.
- Davies, M.J., Heller, S., Skinner, T.C., Campbell, M.J., Carey, M.E., Cradock, S., ... Khunti, K. (2008). Effectiveness of the diabetes education and self management for ongoing and newly diagnosed (DESMOND) programme for people with newly diagnosed type 2 diabetes: Cluster randomised controlled trial. *BMJ* 336(7642), 491-495.
- Davis-Berman, J., & Berman, D. S. (1994). *Wilderness therapy: Foundations, theory and research*. Dubuque, IA: Kendall/Hunt.
- de Groot, M., Anderson, R., Freedland, K. E., Clouse, R. E., & Lustman, P. J. (2001). Association of depression and diabetes complications: A meta-analysis. *Psychosomatic Medicine*, 63(4), 619.
- Deakin, T., McShane, C. E., Cade, J. E. & Williams, R. D. (2005). Group based training for self management strategies in people with type 2 diabetes mellitus. *The Cochrane Database of Systematic Reviews* (2).

- Deardorff, J. (2010, November 22). Diabetes' civil war. *The Chicago Tribune*. Retrieved from http://articles.chicagotribune.com/2010-11-22/a-z/ct-met-diabetes-rift-20101122_1_juvenile-diabetes-insulin-lifestyle-changes-and-medication
- Denzin, N. K. (1978). *Sociological methods*. New York, NY: McGraw Hill
- Depression and Bipolar Support Alliance (2009). *Depression*. Retrieved from http://www.dbsalliance.org/site/PageServer?pagename=about_depression_overview
- Diabetes Advocacy (2011). Insulin Pumps. Retrieved January 3, 2011 from http://www.diabetesadvocacy.com/insulin_pumps.htm
- Diabetes Control and Complications Trial Research Group (1993). The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *New England Journal of Medicine*, 329(14), 977-986.
- Diabetes Education and Camping Association. (2009). Camp Directory. Retrieved from <http://www.diabetescamps.org/camp-directory.html>
- DiMatteo, M. R. (2004). Social support and patient adherence to medical treatment: A meta-analysis. *Health Psychology*, 23(2), 207.
- Dimock, H. S., & Hendry, C. E. (1929). *Camping and character*. New York, NY: Association Press.
- Duncan, B. L., Miller, S. D., & Sparks, J. A. (2004). *The heroic client: A revolutionary way to improve effectiveness through client-directed, outcome-informed therapy*. Retrieved from <http://books.google.com/books>
- Dunning, P. (1993). Moving to adult care. *Diabetes*, 10(6), 226-228.

- Eaton, S., Williams, R., & Bodansky, H. J. (2001). University students with diabetes. *Diabetic Medicine*, 18(11), 940.
- Egede, L. E. (2004). Diabetes, major depression and functional disability among U.S. adults. *Diabetes Care*, 27, 421-428.
- Erikson, E. (1963). *Childhood and society*. New York, NY: Norton.
- Ettaro, L., Songer, T. J., Zhang, P. & Engelgau, M. M. (2004). Cost-of-illness studies in diabetes mellitus. *Pharmacoeconomics*, 22(3), 149-164.
- Fan, L., & Sidani, S. (2009). Effectiveness of diabetes self-management education intervention elements: A meta-analysis. *Canadian Journal of Diabetes*, 33(1), 18-26.
- Fanelli, C. G., & Rossetti, P. (2006). Counterregulatory responses in CSII. *Diabetes Research and Clinical Practice*, 74, 108.
- Feltbower, R. G., Bodansky, H. J., Patterson, C. C., Parslow, R. C., Stephenson, C. R., Reynolds, C., McKinney, P. A. (2008). Acute complications and drug misuse are important causes of death for children and young adults with type 1 diabetes. *Diabetes Care*, 31(5), 922.
- Franklin, V. L., Waller, A., Pagliari, C., & Greene, S. A. (2006). A randomized controlled trial of sweet talk, a text-messaging system to support young people with diabetes. *Diabetic Medicine*, 23(12), 1332.
- Franklin, V. L., Greene, A., Waller, A., Grene, S. A., & Pagliari, C. (2008). Patients' engagement with "Sweet Talk": A text messaging support system for young people with diabetes. *J of Med Internet Res*, 10(2), 20.
- Franoin, R. K. (1997). Diabetes mellitus. *Pediatric Review*, 18, 383-392.

- Friedman, H. S., Tucker, J. S., Tomlinson-Keasey, C., Schwartz, J. E., Wingard, D. C. & Criqui, M. H. (1993). Does childhood personality predict longevity? *Journal of Personality and Social Psychology*, 65(1), 176-185.
- Gallagher, A. H., & Pecot-Hebert, L. (2007). "You need a makeover!": The social construction of female body image in "A makeover story", "What not to wear" and "Extreme makeover". *Popular Communication*, 5(1), 57.
- Gay, L. R., Mills, G., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications*. (8th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Gerson, J. (1999). What effect does a camp for preadolescents with type 1 diabetes have on levels of self-care and self-efficacy? *Dissertation Abstracts International*, UMI no. 1396260.
- Gerstl, E. M., Rabi, W., Rosenbauer, J., Grobe, H., Hofer, S. E., Krause, U., & Holl, R. W. (2008). Metabolic control as reflected by HbA1C in children, adolescents and young adults with type-1 diabetes mellitus: Combined longitudinal analysis including 27,035 patients from 207 centers in Germany and Austria during the last decade. *European Journal of Pediatrics*, 167(4), 447.
- Gilman, R., Huebner, E. S. & Furlong, M. J. (2009). *Handbook of positive psychology in schools*. New York, NY: Routledge.
- Goodwin, D. L. & Staples, K. (2005). The meaning of summer camp experiences to youths with disabilities. *Adapted Physical Activity Quarterly*, 22, 160-178.
- Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods*, 3(1).

- Groessler, E. J., & Cronan, T. A. (2000). A cost analysis of self-management programs for people with chronic illness. *American Journal of Community Psychology*, 28(4), 455.
- Grossman, H. Y., Brink, S., & Hauser, S. (1987). Self-efficacy in adolescent girls and boys with insulin-dependent diabetes mellitus. *Diabetes Care*, 10, 324-329.
- Haan, N., Millsap, R., & Hartka, E. (1986). As time goes by: Change and stability in personality over fifty years. *Psychology and Aging*, 1, 220-232.
- Hackman, J. R. (1983). *A normative model of work team effectiveness* (Interim Report A893631). Retrieved from <http://www.stormingmedia.us/89/8936/A893631.html>
- Halfon, N., & Hochstein, M. (2002). Life course health development: An integrated framework for developing health, policy and research. *The Milbank Quarterly*, 80(3), 433-479.
- Harper, N. J., Russell, K. C., Cooley, R., & Cupples, J. (2007). Catherine freer wilderness therapy expeditions: An exploratory case study of adolescent wilderness therapy, family functioning, and the maintenance of change. *Child Youth Care Forum*, 36(2), 111.
- Harris, S. B., Leiter, L. A., Yale, J. F., Chiasson, J. L., Kleinstiver, P. & Sauriol, L. (2007). Out-of-pocket costs of managing hyperglycemia and hypoglycemia in patients with Type 1 diabetes and insulin-treated Type 2 diabetes. *Canadian Journal of Diabetes*, 31(1), 25-33.
- Hatch, J. A. (2002). *Doing qualitative research in educational settings*. Retrieved from <http://books.google.ca/books>

- Hattie, J., Marsh, H. W., Neill, J. T., & Richards, G. E. (1997). Adventure education and outward bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research*, 67(1), 43.
- Health Canada (2005). It's your health: Type 2 diabetes in Canada. Retrieved from <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/diabete-eng.php>
- Health Canada (2009). Diabetes: Diseases and conditions. Retrieved from <http://www.hc-sc.gc.ca/hc-ps/dc-ma/diabete-eng.php>
- Heatherston, T. F., & Nichols, P. A. (1994). Personal accounts of successful versus failed attempts at life change. *Personality and Social Psychology Bulletin*, 20, 664-675.
- Heisler, M. (2006). Building peer support programs to manage chronic disease: Seven models for success. Oakland, CA: California Health Care Foundation.
- Heisler, M., & Piette, J. D. (2005). I help you, and you help me: Facilitated telephone peer support among patients with diabetes. *The Diabetes Educator*, 31(6), 869-879.
- Herzog, H. (2005). On home turf: Interview location and its social meaning. *Qualitative Sociology*, 28(1), 25-47.
- Hill-Briggs, F. (2003). Problem solving in diabetes self-management: A model of chronic illness self-management behavior. *Annals of Behavioral Medicine*, 25(3), 182.
- Hislop, A. L., Fegan, P. G., Schlaeppli, M. J., Duck, M. & Yeap, B. (2007). Prevalence and associations of psychological distress in young adults with Type 1 diabetes. *Diabetic Medicine*, 25, 91-96.
- Hoare, P. (1984). Does illness foster dependency? A study of epileptic and diabetic children. *Developmental Medicine and Child Neurology*, 26, 20-25.

Hoogma, R. P. L. M., Hammond, P. J., Gomist, R., Kerr, D., Bruttomesso, D., Bouter, P.

... Bolli, G. B. (2005). Comparison of the effects of continuous subcutaneous insulin infusion (CSII) and NPH-based multiple daily insulin injections (MDI) on glycaemic control and quality of life: results of the 5-nations trial. *Diabetic Medicine*, 23, 141-147.

Houkes, W., & Vermaas, P. E. (2004). Actions versus functions: A plea for an alternative metaphysical of artifacts, *The Monist*, 78, 52-71.

Hsu, A., Chen, B. H., Huang, M. C., Lin, S. J., & Lin, M. F. (2009). Disturbed eating behaviors in Taiwanese adolescents with type 1 diabetes mellitus: a comparative study. *Pediatric Diabetes*, 10, 74-1.

Hurley, A., & Shea, C. (1992). Self-efficacy: Strategy for enhancing diabetes self-care. *Diabetes Educator*, 18, 146-150.

International Diabetes Federation (2009). About diabetes. Retrieved from http://www.idf.org/about_diabetes

Ironside, P., Scheckel, M., Wessels, C., Bailey, M. E., Powers, S., & Seeley, D. K. (2003). Experiencing chronic illness: Co-creating new understandings. *Qualitative Health Research*, 13(2), 171-183.

Jack, L. (2003). Diabetes self-management education research: An international review of intervention methods, theories, community partnerships and outcomes. *Dis Manage Health Outcomes*, 11(7), 415-428.

Jacobson, A., Samson, J., Weinger, K., & Ryan, C. (2002). Diabetes, the brain, and behavior: Is there a biological mechanism underlying the association between diabetes and depression? *Int Rev Neurobiol*, 51, 455.

- Jakisch, B. I., Wagner, V. M., Heidtmann, B., Lepler, R., Holterhust, P. M., Kapellen, T. M., ... Holl, R. W. (2007). Comparison of continuous subcutaneous insulin infusion (CSII) and multiple daily injections (MDI) in paediatric Type 1 diabetes: A multicentre matched-pair cohort analysis over 3 years. *Diabetic Medicine*, 25, 80-85.
- Jensen, J. (1989). *Stories to grow on*. Portsmouth, NH: Heinemann.
- Jimenez, C. C. (2007). National athletic trainers' association position statement: Management of the athlete with type 1 diabetes mellitus. *Journal of Athletic Training*, 42(4), 536.
- Johnson, K. M., & Beale, C. L. (2002). Non-metro recreation counties: Their identification and rapid growth. *Rural America*, 17(4), 12-19.
- Jones, J. M., Lawson, M. L., Daneman, D., Olmsted, M. P., & Rodin, G. (2000). Eating disorders in adolescent females with and without type 1 diabetes: Cross sectional study. *Quality Safety in Health Care*, 320(7249), 1563.
- Joseph, D., Griffin, M., Hall, R., & Sullivan, E. (2001). Peer coaching: An intervention for individuals struggling with diabetes. *Diabetes Educator*, 27, 703-710.
- Juvenile Diabetes Research Foundation (2009). *Life with diabetes*. Retrieved from http://www.jdrf.org/index.cfm?page_id=103431
- Juvenile Diabetes Research Foundation (2011). *What is diabetes*. Retrieved from http://www.jdrf.ca/index.cfm?fuseaction=home.viewPage&page_id=0CFB0714-D788-2C84-B4E260715D6CB27F

- Kay, C., Davies, J., Gamsu, D., & Jarman, M. (2009). An exploration of the experiences of young women living with type 1 diabetes. *Journal of Health Psychology, 14*(2), 242.
- Kessler, G. R., Ibrahim, F. A., & Kahn, H. (1986). Character development in high school students. *Adolescence, 21*, 1.
- Kidd, P. S. (1993). Self-protection: Trauma victims' perspectives of their motor vehicle crashes. *Qualitative Health Research, 3*, 320-340.
- King, G., Cathers, T., Brown, E., Specht, J. A., Willoughby, C., Polgar, J. M., ... Havens, L. (2003). Turning points and protective processes in the lives of people with chronic disabilities. *Qualitative Health Research, 13*(2), 184-206.
- Kinnamon, R. (2003). The importance of character development: An interview with Ron Kinnamon. *Camping Magazine, 76*(1), 38-42.
- Knaack, P. (1984). Phenomenological research. *Western Journal of Nursing Research, 6*(1), 107-123.
- Knoers, N. (2000). *Nephrogenic diabete insipidus*. Retrieved from <http://www.ncbi.nlm.nih.gov/books/NBK1177/>
- Koch, T. (1995). Interpretive approaches in nursing research: The influences of Husserl and Heidegger. *Journal of Advanced Nursing, 21*, 827-836.
- Kohn, A. (2003). Rethinking character education: Challenging the conventional wisdom about camps and kids. *Camping Magazine, 76*(5), 24-29.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NW: Prentice-Hall.

- Korpela, K., Kytta, M., & Hartig, T. (2002). Restorative experience, self-regulation, and children's place preferences. *Journal of Environmental Psychology*, 22(4), 387.
- Kovacs, M., Goldston, D., Obrosky, D. S., & Iyengar, S. (1992). Prevalence and predictors of pervasive noncompliance with medical treatment among youths with insulin-dependent diabetes mellitus. *Journal of the American Academy of Child Adolescent Psychiatry*, 31(6), 1112.
- Krichbaum, K., Aarestad, V. & Gbueth, M. (2003). Exploring the connection between self-efficacy and effective diabetes self-management. *Diabetes Educator*, 29, 653-682.
- Kulzer, B., Hermanns, N., Reinecker, H., Haak, T., Kulzer, B., Hermanns, N., ... Haak, T. (2007). Effects of self-management training in Type 2 diabetes: a randomized, prospective trial. *Diabetic Medicine* 24(4), 415-423.
- La Greca, A. M., Auslander, W. F., Greco, P., Spetter, D., Fisher, E. B., & Santiago, J. V. (1995). I get by with a little help from my family and friends: Adolescents' support for diabetes care 1. *Journal of Pediatric Psychology*, 20(4), 449.
- Lamborn, S. D., & Groh, K. (2009). A four-part model of autonomy during emerging adulthood: Associations with adjustment. *International Journal of Behavioral Development*, 33(5), 393.
- Lane, J. T., Ferguson, A., Hall, J, McElligot, M., Miller, M., Lane, P., & Pfeffer, E. (2007). Glycemic control over 3 years in a young adult clinic for patients with type 1 diabetes. *Diabetes Research and Clinical Practice*, 78(3), 385.
- Lehmkuhl, H. D., Merlo, L. J., Storch, E. A., Heidgerken, A., Silverstein, J. H., & Geffken, G. R. (2009). Cognitive abilities in a sample of youth with multiple

episodes of diabetic ketoacidosis. *Journal of Developmental and Physical Disabilities, 1*.

Lerman-Garber, I., Barron-Urbe, C., Calzada-Leon, R., Mercado-Atri, M., Vidal-

Tamayo, R., Quintana, S., & Villa, A. R. (2003). Emotional dysfunction associated with diabetes in Mexican adolescents and young adults with type-1 diabetes. *Salud Publica de Mexico, 45*(1), 13-18.

Lichtman, M. (2010). *Qualitative research in education: A user's guide*. Los Angeles, CA: Sage.

Loeffler, T. A. (2004). *A picture is worth...capturing meaning and facilitating connections: Using outdoor education students' photographs*. Paper presented at International Outdoor Research Conference, La Trobe University. Victoria: Austrlia.

Lorig, K., Holman, H., Sobel, D., Laurent, D., Gonzalez, V., & Minor, M. (1993). *Living a healthy life with chronic conditions*. Palo Alto, CA: Bull Publishing Company.

Lorig, K. R., Sobel, D. S., Stewart, A. L, Brown, B. W., Bandura, A., Ritter, P., Holman, H. R. (1999). Evidence suggesting that chronic disease self-management program can improve health status while reducing hospitalization: A randomized trial. *Medical Care, 37*(1), 5-14.

Loveman, E., Frampton, G.K., & Clegg, A.J. (2008). The clinical effectiveness of diabetes education models for Type 2 diabetes: A systematic review. *Health Technology Assessment 12*(9), 1-136.

Lustman, P. J., Anderson, R. J., & Freedland, K. E. (2000). Depression and poor glycemic control: A meta-analytic review of the literature. *Diabetes Care, 23*(7), 934.

- Mackelprang, R. W. (2010). Disability Controversies: Past, Present and Future. *Journal of Social Work in Disability and Rehabilitation*, 9, 87-98.
- Maffeo, R. (1997). Helping families cope with Type 1 diabetes. *The American Journal of Nursing*, 97(6), 36-39.
- Mann, D. M., Ponieman, D., Leventhal, H., & Halm, E. A. (2009). Predictors of adherence to diabetes medications: The role of disease and medication beliefs. *Journal of Behavioral Medicine*, 32(3), 278.
- Margolis, H., & McCabe, P. P. (2006). Improving self-efficacy and motivation: What to do, what to say. *Intervention in School and Clinic*, 41(4), 218.
- Mathieu, J. (2008). What is Diabulimia? *Journal of the American Dietetic Association*, 108(5).
- McAuliffe-Fogarty, A., Ramsing, R., & Hill, E. (2007). Medical specialty camps for youth with diabetes. *Child and Adolescent psychiatric clinics of North America*, 16(4), 887-908.
- McKenzie, M. D. (2000). How are adventure education program outcomes achieved?: A review of the literature. *Australian Journal of Outdoor Education*, 5(1), 19-29.
- McWilliam, C. L., Stewart, M., Brown, J. B., Desai, K. & Coderre, P. (1996). Creating health with chronic illness. *Advances in Nursing Science*, 18(3), 1-15.
- Mellinger, D. C. (2003). Preparing students with diabetes for life at college. *Diabetes Care*, 26(9), 2675-2679.
- Mellor, S., Barclay, L. A., Bulger, C. A., & Kath, L. M. (2006). Augmenting the effect of verbal persuasion on self-efficacy to serve as a steward: Gender similarity in a

- union environment. *Journal of Occupational and Organizational Psychology*, 79, 121-129.
- Melman, J. E., & Sanders, J. A. (1986). Psychosocial aspects of childhood cancer: A review of literature. *Journal of Child Psychiatry*, 27, 145-167.
- Mensing, C., Boucher, J., Cypress, M., Weinger, K., Mulcahy, K., Barta, P., ... Adams, C. (2002). National standards for diabetes self-management education. *Diabetes Care*, 25, S140-147.
- Merriam, S. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.
- Mertens, D.M. (2005). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative and mixed methods (2nd ed.)*. Thousand Oaks, CA: Sage.
- Miauton, L., Narring, F., & Michaud, P. A. (2003). Chronic illness, life style and emotional health in adolescence: Results of a cross-sectional survey on the health of 15-20-year-olds in Switzerland. *European Journal of Pediatrics*, 162(10), 682.
- Montez, J. K. , & Karner, T. X. (2005). Understanding the diabetic body-self. *Qualitative Health Research*, 15(8), 1086.
- Morse, J. M., (1994). *Designing funded qualitative research*. In N. K. Denzin & Y. S. Lincoln (Eds.). *Handbook of qualitative research*. Thousand Oaks, CA: Sage.
- Morse, J. M., & Field, P. A. (1998). *Nursing Research of Qualitative Approaches*. Cheltenham Stanley Thornes.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

- Musselman, L., Betan, E., Larsen, H., & Phillips, S. P. (2003). Relationship of depression to diabetes types 1 and 2: Epidemiology, biology and treatment. *Biol Psychiatry*, 54, 317-329.
- National Institute of Health (2008). *Information on diabetes, diabetes symptoms and treatment*. Retrieved from <http://www.ndep.nih.gov/diabetes-facts/index.aspx>
- National Institute of Health (2009). *Eating disorders*. Retrieved from <http://www.nimh.nih.gov/health/publications/eating-disorders/complete-index.shtml>
- Neslon, S. M. & Lindsay, R. S. (2009). Type 1 diabetes in pregnancy: Influences on mother and fetus. *Fetal and Maternal Medicine Review*, 20, 17-47.
- Nielsen, L. R., Pedersen-Bjergaard, U., Thorsteinsson, B., Johansen, M., Damm, P., & Mathiesen, E. R. (2008). Hypoglycemia in pregnancy women with Type 1 diabetes. *Diabetes Care*, 31, 9-14.
- Nimri, R., Weintrob, N., Benzaquen, H., Ofan, R., Fayman, G., & Phillip, M. (2006). Insulin pump therapy in youth with type 1 diabetes: A retrospective paired study. *Pediatrics*, 117(6), 2126.
- Norris, S. L., Nichols, P. J., Caspersen, C. J., Glasgow, R. E., Engelgau, M., Jack, L., ... McCulloch, D. (2002). Increasing diabetes self-management education in community settings: A systematic review. *American Journal of Preventative Medicine*, 22(4), 39-66.
- Ontario Camping Association. (2010a). About Us. Retrieved from <http://www.ontariocamps.ca/about/index.html>
- Ontario Camping Association. (2010b). Camp Huronda. Retrieved from <http://www.ontariocamps.ca/camps/id/2320>.

- Ontario Camping Association. (2010c). Camp Kodiak. Retrieved from <http://www.ontariocamps.ca/camps/id/2332>
- Ontario Camping Association. (2010d). Camp Trillium. Retrieved from <http://www.ontariocamps.ca/search/#top>
- Ott, J., Greening, L., Plarady, N., Holderby, A., & DeBell, W. K. (2000). Self-efficacy as a mediator variable for adolescents' adherence to treatment for insulin-dependent diabetes mellitus. *Children's Health Care*, 29(1), 47.
- Pacaud, D., Crawford, S., Stephure, D. K., Dean, H. J., Couch, R., & Dewey, D. (2007). Effect of type 1 diabetes on psychosocial maturation in young adults. *Journal of Adolescent Health*, 40(1), 29.
- Park, N., & Peterson, C., (2006). Moral competence and character strengths among adolescents: The development and validation of the Values in Action Inventory of Strengths for Youth. *Journal of Adolescence*, 29, 891-909.
- Parse, R., Coyne, A., & Smith, M. (1985). *Nursing Research Qualitative methods*. Bowie, MD: Brady Communications.
- Paterson, C., & Britten, N. (2003). Acupuncture for people with chronic illness: Combining qualitative and quantitative outcome assessment. *The Journal of Alternative and Complementary Medicine*, 9(5), 671-681.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury park, CA: Sage.
- Patton, M. Q. (2002). *Qualitative evaluation and research methods (3rd ed.)*. Newbury Park, CA: Sage.

Pendley, J. S., Kasmien, L. J., Miller, D. L., Donze, J., Swenson, C., & Reeves, G.

(2002). Peer and family support in children and adolescents with Type 1 diabetes.

Journal of Pediatric Psychology, 27(5), 429-438.

Perez-Pena, R. (2006, May 17). Beyond 'I'm a Diabetic', little common ground. *New*

York Times. Retrieved from

<http://www.nytimes.com/2006/05/17/nyregion/17diabetes.html?pagewanted=print>

Peterson, C., & Seligman, M. E. P. (2004). *Authentic happiness: Using the new positive*

psychology to realize your potential for lasting fulfillment. New York, NY: Free

Press.

Peyrot, M., & Rubin, R. R. (2007). Behavioral and psychosocial interventions in

diabetes. *Diabetes Care*, 30(10), 2433-2441.

Philpott, T., & Gray, T. (2007). *Capturing the complex nature of learning to teach in the*

outdoors: A case study. Paper presented at the Australian Association for Research

in Education Annual Conference. Fremantle: Australia.

Pickup, J., Mattock, M., & Kerry, S. (2002). Glycaemic control with continuous

subcutaneous insulin infusion compared with intensive insulin injections in patients

with type 1 diabetes: Meta-analysis of randomized controlled trials. *Quality Safety*

in Health Care, 324(7339), 705.

Powars, D. R., & Brown, M. (1990). Sickle cell disease: Summer camp experience of a

22-year community-supported program. *Clinical Pediatrics*, 29(2), 81.

Propst, D. B., & Koesler, R. A. (1998). Bandura goes outdoors: Role of self-efficacy in

the outdoor leadership development process. *Leisure Sciences*, 20, 319.

- Rasmussen, B., O'Connell, B., Dunning, P., & Cox, H. (2007). Young women with type 1 diabetes' management of turning points and transitions. *Qualitative Health Research, 17*(3), 300.
- Ray, M. (1994). The richness of phenomenology: Philosophic, theoretic and methodological concerns. In *Critical Issues in Qualitative Research Methods*. Thousand Oaks, CA: Sage.
- Research and Training Center on Independent Living (1987). *The Guidelines for Reporting and Writing about People with Disabilities*. Retrieved from: www.rtcil.org/products/RTCIL%20publications/Media/Guidelines%20for%20Reporting%20and%20Writing%20about%20People%20with%20Disabilities%207th%20Edition.pdf+Research+and+Training+Center+on+Independent+Living+The+Guidelines+for+Reporting+and+Writing+about+People+with+Disabilities&hl=en&gl=ca&pid=bl&srcid=ADGEESgYWNclQdPCfapYYA38W7ge1a4Z6zdu0uZ8lZrYh9JH_XfDH1px319yn7Pp5fTpGnvooSDi_0blwfPkhLe8R0tyWahjJGLbDjen20rX7RFaKOHPV73cqJZcDR-bNyP5u3c72TnH&sig=AHIEtbQt5VIJUuptO05Vfu7NATbBtrvBaQ&pli=1
- Retnakaran, R., Hochman, J., DeVries, J. H., Hanaire-Broutin, H., Heine, R. J., Melki, V., & Zinman, B. (2004). Continuous subcutaneous insulin infusion versus multiple daily injections. *Diabetes Care, 27*, 2590-2596.
- Richards, G., Morris, M., Booker, S., & Johnson, A. (2006). What do people with Type 1 diabetes find helpful in health professionals? Results from a focus group study. *Pract Diab Int, 23*(6), 249-253.

- Ritholz, M. D., Smaldone, A., Lee, J., Castillo, A., Wolpert, H., & Weinger, K. (2007). Perceptions of psychosocial factors and the insulin pump. *Diabetes Care*, 30(3), 549.
- Rosen, L. D., Cheever, N. A. & Carrier, M. L. (2008). The association of parenting style and child age with parental limit setting and adolescent MySpace behavior. *Journal of Applied Developmental Psychology*, 29(6), 459.
- Rosland, A. M., Kieffer, E., Israel, B., Cofield, M., Palmisano, G., Sinco, B, ... Heisler, M. (2008). When is social support important? The association of family support and professional support with specific diabetes self-management behaviors. *Journal of General Internal Medicine*, 23(12), 1992.
- Rush, K. L., Kee, C. C., & Rice, M. (2005). Nurses as imperfect role models for health promotion. *Western Journal of Nursing Research*, 27(2), 166-183.
- Russell, K. C., Hendee, J. C., & Phillips-Miller, D. (2000). How wilderness therapy works: An examination of the wilderness therapy process to treat adolescents with behavioral problems and addictions. *USDA Forest Service Proceedings RMRS-P-15(3)*, 207-218.
- Russell, K. C., & Phillips-Miller, D. (2002). Perspectives on the wilderness therapy process and its relation to outcome. *Child and Youth Care Forum*, 31(6), 415-439.
- Rutter, M. (1979). Protective factors in children's responses to stress an disadvantage. In M. W. Kent & J. E. Rolf (Eds.), *Social competence in children*. Hanover, NH: University Press of New England.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331.

- Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Neuchterlein & Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. Cambridge, MA: Cambridge University Press.
- Rydall, A. C., Rodin, G. M., Olmsted, M. P., Devenyi, R. G. & Daneman, D. (1997). Disordered eating behavior and microvascular complications in young women with insulin-dependent diabetes mellitus. *New England Journal of Medicine*, 336(26), 1849.
- Sarkisian, C. A., Brown, A. F., Norris, C. K., Wintz, R. L. & Mangione, C. M. (2003). A systematic review of diabetes self-care interventions for older, African American or Latino adults. *Diabetes Education*, 28, 467-479.
- Saunders, A., Wallymahmed, M., & MacFarlane, I. (2004). Glycaemic control in a type 1 diabetes clinic for younger adults. *QJM*, 97, 575-580.
- Schilling, L. S., Grey, M., & Knafl, K. A. (2006). Changing patterns of self-management in youth with type I diabetes. *Journal of Pediatric Nursing*, 21(6), 412.
- Scholl, N. (2009). Five processes of response distortion: A model of response filters. *Qualitative Market Research: An International Journal*, 12(1), 7-14.
- Schwab, K. O., Doerfer, J., Hecker, W., Grulich-Henn, J., Wiemann, D., Kordonouri, O., & Holl, R. W. (2006). Spectrum and prevalence of atherogenic risk factors in 27,358 children, adolescents, and young adults with Type 1 diabetes. *Diabetes Care*, 29, 218-225.

- Schwartz, C.E., Foley, F.W., Rao, S.M., Bernardin, L.J., Lipshutz, M. & Kashala, P., 1995. A prospective study of stressful life events and course of disease in multiple sclerosis. *Psychometric Medicine*, 57, 89.
- Scott, L., Vallis, M., Charette, M., Murray, A., & Latta, R. (2002). Transition of care: Researching the needs of young adults with Type 1 diabetes. *Canadian Journal of Diabetes*, 29(3), 203-210.
- Sekine, A. (1994). The effect of camp experience upon the locus of control and general self-efficacy of school children. *Bulletin of Institute of Health and Sports Sciences*, 17, 177-183.
- Shelley, M., & Pakenham, K. I. (2004). External health locus of control and general self-efficacy: Moderators of emotional distress among university students. *Australian Journal of Psychology*, 56(3), 191.
- Shepherd, J., Harden, A., Rees, R., Brunton, G., Garcia, J., Oliver, S., & Oakley, A. (2006). Young people and healthy eating: A systematic review of research on barriers and facilitators. *Health Education Research*, 21(2), 239.
- Sibthorp, J. (2003). An empirical look at Walsh and Golins' adventure education process model: Relationships between antecedent factors, perceptions of characteristics of an adventure education experience, and changes in self-efficacy. *Journal of Leisure Research*, 35(1), 80-106.
- Sicard, D., & Taylor, J. (2005). Comparison of point-of-care HbA1C test versus standardized laboratory testing. *The Annals of Pharmacotherapy*, 39(6), 1024.
- Sigurdardottir, A. K., Jonsdottir, H. & Benediktsson, R. (2007). Outcomes of educational interventions in type 2 diabetes: WEKA data-mining analysis. *Patient Education & Counseling*, 67(1-2), 21-31.

- Skinner, B. F. (1971). *Beyond freedom and dignity*. New York, NY: Knopf, 1971.
- Skinner, T. C., Hampson, S. E., & Fife-Schaw, C. (2002). Personality, personal model beliefs, and self-care in adolescents and young adults with type 1 diabetes. *Health Psychology, 21*(1), 61.
- Skorobohacz, C. (2008). *Identifying the barriers to effective identity and role negotiation for women master of education students*. (Unpublished master's thesis). Brock University, St. Catharines, ON.
- Sparud-Lundin, C., Ohrn, I., & Danielson, E. (2010). Redefining relationships and identity in young adults with Type 1 diabetes. *Journal of Advanced Nursing, 66*(1), 128-138.
- Sturt, J. A., Whitlock, S., Fox, C., Hearnshaw, H., Farmer, A. J., Wakelin, M., ... Dale, J. (2008). Effects of the diabetes manual 1:1 structure education in primary care. *Diabetic Medicine, 25*, 722-731.
- Sturt, J., Hearnshaw, H., Barlow, J., & Hainsworth, J. (2005). Supporting a curriculum for delivering Type 2 diabetes patient self-management education: A patient needs assessment. *Prim Care Res Dev, 6*, 291-299.
- Sugarman, J., & Sulmasy, D. P. (2001). *Methods in Medical Ethics*. Washington, DC: Georgetown University Press
- Sulli, N., & Shashaj, B. (2006). Long-term benefits of continuous subcutaneous insulin infusion in children with type 1 diabetes: A 4-year follow-up. *Diabetic Medicine, 23*(8), 900.
- Sullivan, E., & Joseph, D. (2000). University/community partnership to improve the lives of people with diabetes. *Pract Diabetes Intern, 17*, 26-30.

- Surwit, R. S., Schneider, M. S., & Feinglos, M. N. (1992). Stress and diabetes mellitus. *Diabetes Care*, 15(10), 1413-1422.
- Swartz, A. (2009). The strongest prescription of all: A week in the woods. *American Journal of Public Health*, 99(S2), S210-S215.
- Task Force on Community Preventive Services. (2002). Recommendations for health-care systems and self-management education interventions to reduce morbidity and mortality from diabetes. *American Journal of Preventative Medicine*, 22(4), 10-4.
- Thelen, D. (1989). Memory and American History. *The Journal of American History* 75, 1117-1129.
- Thomas S.P., & Pollio H.R. (2002) *Listening to Patients: A Phenomenological Approach to Nursing Research and Practice*. New York, NY: Springer.
- Thorpe, C. T., Lewis, M. A., & Sterba, K. R. (2008). Reactions to health-related social control in young adults with Type 1 diabetes. *Journal of Behavioral Medicine*, 31, 93-103.
- Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education*, 23, 944-956.
- Van Dam, H.A., Van Der Horst, F., Van Den Borne, B., Ryckman, R., & Crebolder, H. (2003). Provider-patient interaction in diabetes care: effects on patient self-care and outcomes: A systematic review. *Patient Education & Counseling* 51(1):17-28.
- Van Wallegghem, N., Macdonald, C. A., & Dean, H. J. (2008). Evaluation of a systems navigator model for transition from pediatric to adult care for young adults with type 1 diabetes. *Diabetes Care*, 31(8), 1529.

- Varma, S., & Bourgeois, M. (2008). Management of diabetic ketoacidosis: Successful management experience of more than 32 years. *Pediatrics*, 121, S106.
- Vollrath, M. E., Landolt, M. A., Gnehm, H. E., Laimbacher, J., & Sennhauser, F. H. (2007). Child and parental personality are associated with glycaemic control in Type 1 diabetes. *Diabetic Medicine*, 24, 1028-1033.
- Von Korff, M., Glasgow, R. E. & Sharpe, M. (2002). Organising care for chronic illness. *BMJ*, 325, 92.
- Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation the resilience scale. *Journal of Nursing Measurement*, 1, 165-178.
- Walker, L.J., & Pitts, R.C. (1998). Naturalistic conceptions of moral maturity. *Developmental Psychology*, 34, 403-419.
- Walsh, S. (1990). Education of the handicapped act. *Early Childhood Report: Children with Special Needs and their Families*, 5.
- Wangberg, S. C. (2008). An internet-based diabetes self-care intervention tailored to self-efficacy. *Health Education Research*, 23(1), 170-179.
- Warnick, R. B. (2004). Northeast's recreation trends and markets: A new data source. *Proceedings of the 2004 Northeastern Recreational Research Symposium*. GTR-NE-326.
- Weikle, B. (2010, September 30). The Other Diabetes. *The Toronto Star*. Retrieved on from <http://thestar.blogs.com/parentcentral/2010/09/ride-for-juvenile.html>
- Whiting, S. (2010). Taking on theory of controlling diabetes. Retrieved on January 3, 2011 from <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/04/19/DDN01COM5H.DTL>

- Williams, B. (2000). The treatment of adolescent populations: An institutional versus a wilderness setting. *Journal of Child and Adolescent Group Therapy*, 10, 47-56.
- Williams, G. C., McGregor, H. A., Zeldman, A., Freedman, Z. R., & Deci, E. L. (2004). Testing a self-determination theory process model for promoting glycemic control through diabetes self-management. *Health Psychology*, 23(1), 58.
- World Health Organization (2011). WHO Diabetes. Retrieved on January 3, 2011 from <http://www.who.int/mediacentre/factsheets/fs312/en/>
- Wurdinger, S., & Paxton, T. (2003). Using multiple levels of experience to promote autonomy in adventure education students. *Journal of Adventure Education Outdoor Learning*, 3(1), 41.
- Wysocki, T., Harris, M. A., Buckloh, L. M., Wilkinson, K., Sadler, M., Mauras, N., & White, N. H., (2006). Self-care autonomy and outcomes of intensive therapy or usual care in youth with type 1 diabetes. *Journal of Pediatric Psychology*, 31(10), 1036.
- Zabaleta, A.M., & Forbes, A. (2007). Structured group-based education for type 2 diabetes in primary care. *British Journal of Community Nursing* 12(4), 158-162.
- Zinken, K., Cradock, S., & Skinner, T. C. (2008). Analysis system for self-efficacy training (ASSET): Assessing treatment fidelity of self-management interventions. *Patient Education and Counseling*, 72(2), 186.

Appendix A

Initial Electronic Communication Script

Project Title: An examination of outdoor experience in the development of character in young adults with Type 1 diabetes

Principal Investigator:

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Initial Communication

The following email was sent to those individuals who requested to participate in this research project.

(Date)

Dear Connected in Motion members,

I, Jen Hanson, would like to take this opportunity to invite you to participate in a research study that I am conducting as partial fulfillment of my Master of Education degree with Brock University. The purpose of this research is to investigate the role that outdoor experience plays in the development of character among young adults with Type 1 diabetes and how these developments influence diabetes management. I expect that the results of this research will support the development of both outdoor programming and experiential diabetes education for young adults with Type 1 diabetes. Additionally, results will provide empirical evidence to support the initiatives of Connected in Motion.

Your participation will involve an interview of approximately one and a half hours and will take place in a location that is convenient for yourself.

If you are between the ages of 18 and 30 and have participated in Connected in Motion's Winter Slipstream weekend in 2009 or 2010, I would love to have you participate in my research. If you are interested in receiving further information about this research, or are interested in participating, please contact me, Jen Hanson, at jennifer.hanson@brocku.ca at your earliest convenience.

Thank you,

Jennifer Hanson

Follow up Communication

The following email was sent to those individuals who indicated their interest and who received informed consent and official letter of invitation, but were not one of the first six participants to return these documents to the researcher.

(Date)

Dear (Individual's Name),

I am writing to inform you that, at this time, your participation will not be needed for my research study. I have already received informed consent back from six participants and am only able to interview these six individuals. I may, however, contact you in the next four weeks should any of these individuals become unable to complete an interview or should I require additional participants to ensure an adequate amount of information has been collected.

I sincerely thank you for expressing your interest in my research. Once all of the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations and journal articles. If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact me by email at jennifer.hanson@brocku.ca. If you would like a summary of the results, please let me know now by providing me with your email address. This summary will be sent to you by the study's expected completion date of August 2010.

Thank you,

Jennifer Hanson

Member Check Request Letter

(Date)

Dear (*Participant Name*);

Attached is a draft copy of the typed transcript representing the interview that took place between you and I on (**Date of Interview**). The transcript will be reviewed and analyzed as part of my thesis, in partial fulfillment of my Master of Education degree at Brock University

I hope you will find that I have been faithful to the information you gave me and to the general circumstances of your character development, diabetes management and outdoor experiences, as you have described them. I ask that you take the time to review and critique this transcription and make any changes to the transcript as you see fit.

If you feel that I have misrepresented you in any way, or if my presentation of events with which you were connected is not as you remember them, I invite you to send me your comments and I shall take them into consideration as I revise this draft.

I look forward to receiving your critique via email within the next two weeks. If you would prefer to discuss this transcript by phone, please feel free to give me a call at (905) 931-2214.

Sincerely,

Jennifer Hanson

M.Ed Candidate
Faculty of Education
Brock University
(905) 931-2214
jennifer.hanson@brocku.ca

Participant Feedback Letter

(Date)

Dear *(Participant Name)*,

I would like to thank you for your participation in this study. As a reminder, the purpose of this study is to investigate the role of outdoor experiences in the development of character and in diabetes self-management among young adults living with Type 1 diabetes.

The data collected during interviews will contribute to a better understanding of the role that outdoor experience plays in the development of self-efficacy and autonomy and, ultimately, to the development and diabetes education programming specifically targeted for young adults.

Please remember that any data pertaining to you, as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations and journal articles. If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact me at either the phone number or email address listed below. If you would like a summary of the results, please let me know now by providing me with your email address. When the study is completed, I will send it to you. The study is expected to be complete by August 2010.

As with all Brock University theses involving human participants, this research was reviewed by, and received ethics clearance through, Brock University's Research Ethics Board. If you have any pertinent questions about your rights as a research participant, please contact the Brock University Research Ethics Officer (905 688-5550 ext 3035, reb@brocku.ca)

Sincerely,

Jennifer Hanson
M.Ed Candidate
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Appendix B

Letter of Invitation

(Date)

Title of Study: An examination of outdoor experience in the development of character among young adults living with Type 1 diabetes

Principal Investigator: Jennifer Hanson [B.Kin. (Honours), B.Ed (J/I), M.Ed Candidate], Department of Education, Brock University

Faculty Supervisor: Dr. Mary Breunig, Department of Recreation and Leisure Studies, Brock University

I, Jennifer Hanson, M.Ed. Candidate from the Department of Education, Brock University, invites you to participate in a research project entitled: An examination of outdoor experience in development of character among adolescents with Type One Diabetes.

The purpose of this study is to investigate the role that outdoor experience plays in the character development of young Canadians living with Type 1 diabetes.

Participation will take approximately three hours of your time. Your participation will involve an individual interview with myself, as the researcher. The approximate duration of the interview will be approximately one and a half hours and will take place at a location that is convenient and comfortable for you. You will choose the location of the interview, in consultation with myself, the interviewer. In addition, you will be asked to bring an artifact to the interview. This artifact can be any item that you feel best represents your experiences in the outdoors. Should you choose to use a photograph as your artifact, please be sure that you are the only individual pictured in this photograph to ensure that the privacy of all individuals is respected. You will be asked to reflect on and describe verbally, why you have chosen this artifact to represent outdoor experience and how it demonstrates the influence that outdoor experience has had on your life.

You may choose to withdraw from the study at any time.

All information you provide is considered confidential and grouped with responses from other participants; your name will not be included or, in any other way, associated with the data collected in the study. To further ensure confidentiality, pseudonyms will replace your real name in all instances from the commencement of research until completion and in any future publications. Data collected during this study will be stored on a password protected personal external hard drive, which will be locked in a filing cabinet in my home office when not in use. Data will be kept for approximately 12 months after which time all data will be deleted. Artifacts will at no time be retained

by myself as the researcher and will be returned to you immediately following the interview. Access to this data will be restricted to myself, (Jennifer Hanson, the researcher) and Mary Breunig (research advisor).

Possible benefits of participation include being involved in the improvement of educational programs for young adults with Type 1 diabetes. Additionally, you will be involved in creating support for the non-profit organization Connected in Motion and as a result, will ultimately be supporting the organization's growth and development.

This research is not sponsored by any outside companies or agencies.

If you have any pertinent questions about your rights as a research participant, please contact the Brock University Research Ethics Officer (905 688-5550 ext 3035, reb@brocku.ca)

If you have any questions, I'd love to provide more information. Please feel free to contact me via the information provided below.

Thank you

Principal Investigator: Faculty Supervisor:

Jennifer Hanson [B.Kin.
(Honours), B.Ed (J/I), M.Ed
Candidate]
Brock University
Department of Education
Department of
(905) 931-2214
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Dr. Mary Breunig [Ph.D., M.S.,
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This study was reviewed and received ethics clearance through Brock University's Research Ethics Board (file # 09-160)

Appendix C

Informed Consent Form

Date: _____ (Date)
Project Title: An examination of outdoor experience in the development of character in young adults living with Type 1 diabetes

Principal Investigator:

Jennifer Hanson [B.Kin. (Honours), B.Ed (J/I),
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INVITATION

You are invited to participate in a study that involves research. The purpose of this study is to examine how outdoor experience influences the development of character in young adults living with Type 1 diabetes.

WHAT IS INVOLVED

Participation will take approximately three hours of your time. Your participation will involve an individual interview with myself, as the researcher. The approximate duration of the interview will be approximately one and a half hours and will take place at a location that is convenient and comfortable for you. You will choose the location of the interview, in consultation with myself, the interviewer. In addition, you will be asked to bring to the interview an artifact that you feel best represents your experiences in the outdoors. This artifact may be any item that you feel is representative of an outdoor experience; however should you choose to use a photograph as your artifact, please be sure that you are the only individual pictured in this photograph to ensure that the privacy of all individuals is respected. You will be asked to reflect on and describe verbally, why you have chosen this artifact to represent outdoor experience and how it demonstrates the influence that outdoor experience has had on your life.

POTENTIAL BENEFITS AND RISKS

Possible benefits of participation include being involved in the improvement of educational programs for young adults with Type 1 diabetes. Additionally, you will be involved in creating support for the non-profit organization Connected in Motion and as a result, will ultimately be supporting the organization's growth and development. There is a possibility that you may be at risk for emotional stress during this interview. Should this occur, the interview will be stopped immediately and you will be directed contact

the Niagara Distress Centre at (905) 688-3711. If you are situated outside of the Niagara Region, you may contact Distress Centres Ontario at (416) 486-2242 where you will be connected to a local distress line, more appropriate to your living location.

CONFIDENTIALITY

All information you provide is considered confidential and grouped with responses from other participants; your name will not be included or, in any other way, associated with the data collected in the study. To further ensure confidentiality, pseudonyms will replace your real name in all instances from the commencement of research until completion and in any future publications. Data collected during this study will be stored on a password protected personal external hard drive. Data will be kept for approximately 12 months, at which time all data will be deleted. Artifacts will at no time be retained by myself as the researcher and will be returned to you immediately following the interview. Access to this data will be restricted to Jennifer Hanson (the researcher) and Mary Breunig (research advisor).

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled.

PUBLICATION OF RESULTS

Results of this study may be published in professional journals relating to outdoor and experiential education as well as diabetes lifestyle and education, and may be presented at various conferences associated with my research topic (e.g. conferences run through the Diabetes Education and Camping Association, International Diabetes Federation, Canadian Diabetes Association, Council of Outdoor Educators of Ontario). It is my hope that the results of my research will be disseminated in the form of workshops to outdoor educators, diabetes educators and to young adults with diabetes directly. Contacts within the Diabetes Education and Camping Association, the Council of Outdoor Educators of Ontario, the Canadian Diabetes Association Youth Advocacy Program and the International Diabetes Federation's Diabetes Youth Ambassador program will be utilized in order to reach the largest audience of concerned individuals. Furthermore, I expect that the findings of this research will directly benefit Connected in Motion by providing empirical evidence relating to the development of character through the outdoor programming that the organization offers. This evidence can be used directly by Connected in Motion to promote organization events, to justify the use of outdoor experience for diabetes management to healthcare professionals and to cater experiential diabetes education to the needs of young adults. Feedback about this study will be available by contacting Jennifer Hanson via email at jennifer.hanson@brocku.ca in (or after) August 2010.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please do not hesitate to contact Jennifer Hanson using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (file # **09-160**). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form for your records.

CONSENT FORM

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: _____

Signature: _____ Date: _____

Appendix D

Interview Script

Date: (Date)

Project Title: An examination of outdoor experience in the development of character in young adults living with Type 1 diabetes

Principal Investigator:

Jennifer Hanson [B.Kin. (Honours), B.Ed (J/I),
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This interview is expected to take one and a half hours.

Introductory Phase (5 minutes)

During the introductory phase of my interview, expected to last five minutes, I will be introducing myself, introducing the purpose of the interview, introducing the purpose of my research, explaining why I will be recording the interview, via a voice recording device, and collecting some general demographic data from participants. Demographic data will be recorded via pen and paper and will include age, gender, age at diagnosis of diabetes, and occupation.

Core Concept Phase (45 minutes)

See interview script below of guiding questions.

Interview Break (15 minutes)

An interview break will be taken for 15 minutes. Ideally, this break will occur during the Core Concept phase of this interview and will allow time for both myself and the participant to relax and reflect on the ideas and concepts that have been discussed so far. The participant will be informed that we will be taking a 15-minute break and the recording device will be switched off. The participant will be informed that no material discussed during this break will be included in the interview transcript, nor will it be used as data for this research.

Artifact-Elicitation Interview (15 minutes)

To introduce this section of the interview I will outline why I have chosen to use artifact examination and will go over what will happen during this section of the interview. Questions to guide this section are included below.

Conclusion (10 minutes)

In order to conclude my interview, I will summarize what I think I have learned from the interview. I will then allow the participant to comment on my summary and to add any information that they feel has been left out or needs clarification. The interview will officially commence when the recording device is switched off.

Introductory Phase Script (5 minutes)

Interviewer: Hello. My name is Jen Hanson and I am going to be interviewing you today. I would first like to thank you for meeting with me and for your willingness to be involved in my research. To start off, I would like to briefly go over some information from the informed consent that you submitted to me previously. I would then like to tell you a little bit about myself and about why I am interested in interviewing you today. I will go over the purpose of both this interview and the purpose of my research, how the interview will be recorded and will collect some demographic information (your name, age, etc.) before asking you about your experiences in the outdoors.

The following interview is scheduled to take no longer than one and a half hours; however, if you would like to discuss any portion of the interview in more detail, I am happy to extend the scheduled interview time. Any information that you provide to me today will be considered confidential and will be grouped with responses from other participants; your name will not be included or, in any other way, associated with the data collected in the study. The information that I collect today will be stored on a password protected personal external hard drive belonging to myself. It will be kept in a locked filing cabinet in my home office for approximately 12 months, at which time all information regarding our conversation today will be deleted. The artifact you have brought along today will be returned to you following this interview. The only individuals who will have access to the information that I collect today will be myself, as the researcher, and my research advisor, Dr. Mary Breunig. **Do you have any questions about anything so far? Do you have any questions about anything you read in the informed consent?**

I am currently a second year graduate student in the Faculty of Education at Brock University, and am conducting research as part of my Master's thesis. The purpose of my research is to investigate the process by which character development occurs through outdoor experience. I am particularly interested in how this process occurs among young adults with Type 1 diabetes. The reason that I have devoted my research to this topic is that I, myself, am a Type 1 diabetic and have seen the changes, in both myself and my peers, through involvement in outdoor activities, particularly camping. I have become interested as to why individuals who participate in outdoor activities seem to develop character traits differently than individuals who do not have outdoor experiences. I have come to understand, from my own experience and from a review of other researcher's findings, that certain character traits, specifically self-efficacy and autonomy, can have a large and positive influence on the life of a young adult with Type 1 diabetes. Speaking with you, today, will help me to gain a better understanding of the experiences that other young adults with Type 1 diabetes have had in the outdoors. I hope that our conversation will help me uncover, more fully, the process by which character development occurs through outdoor experiences, as well as the ways in which character development influences diabetes management.

I expect that findings from this research will help to promote the development of outdoor programming for young adults with Type 1 diabetes. This will directly benefit Connected in Motion and provide the organization with feedback as to how its programming is benefiting its members as well as provide information that will be useful in the planning of future Connected in Motion events.

Before we begin our conversation, I would like to record some basic information about you. This information will be stored separately from your interview transcription so our discussion will not be identifiable by your name, as indicated in the informed consent form you completed.

What is your name?

What is your gender?

When is your date of birth?

When were you diagnosed with Diabetes? How long have you been living with Diabetes?

How long have you been involved with Connected in Motion?

Do you use injections of a pump to administer insulin?

In order to allow me to review what we have discussed today, I will be recording our conversation using a voice recorder. By doing this I will be able to better analyze what we have discussed and will be able to concentrate more fully on our conversation today, rather than worrying about writing notes or transcribing what we are saying by pen and paper. Later on, after our interview, I will take time to transcribe our conversation into type, via a computer. **Are you comfortable with this?** I would like to, first, test the recorder to be sure that the sound is clear and that it is working properly. *[Will test the voice recorder and play the sound back to ensure it is recording].*

Thank you. We are now ready to start the core part of this interview. We will be taking a 15-minute break from the interview approximately 45 minutes in. If you feel you need a break at any other time, please, do not hesitate to let me know. During this break, the recording device will be switched off. No information discussed during this break will be used as part of the interview transcript, nor will it be used for any data for this research.

Core Concepts Interview Script (45 minutes)

Key Questions

1. Describe your experience in the outdoors.

2. Describe your experience at Connected in Motion's Slipstream Weekend.

3. Autonomy is related to feelings of independence. Did you notice changes in your own autonomy through participation in Connected in Motion's Slipstream Weekend?

4. Do you feel that these changes or lack of change (in autonomy) has influenced your diabetes management? How?

5. Self-efficacy relates to feelings of confidence in your ability to achieve specific tasks. I would like to hear about how changes in your ability to manage your diabetes might have occurred through your participation in Connected in Motion's Slipstream Weekend. How did you feel about these experiences?

6. Have there been specific outdoor experiences that have been especially influential in your development of character (if this existed)? Why do you think these activities have had such an impact?

7. How has Connected in Motion influenced your experience in the outdoors and your development of character?

Prompts (if necessary)

Types of experiences
Duration of experiences
Who did you participate with?
When did you participate?

Types of experiences
Duration of experiences
Who did you participate with?
When did you participate?

Changes in feelings about yourself
Changes in feelings and sensitivity towards others
Ability to manage new tasks

Feelings about self in relation to management
Feelings about others in relation to management
Feelings about managing new situations in relation to management

Changes in insulin administration
Changes in blood glucose monitoring
Changes in eating
Changes in exercise

Refer to specific activities mentioned in response to question 1

Past activities
Physically
Socially
Emotionally

Thank you! I would now like to take about fifteen minutes to discuss the artifact you have chosen to include as a representation of your outdoor experiences. I'm going to ask you some questions about the artifact and give you a chance to reflect on what it means to you.

[Will set artifact out so it is in view of both the interviewer and the participant].

Artifact-Elicitation Interview Script (15 minutes)

Key Questions

1. Describe to me the experience that is represented by this artifact.

Prompts

What is this artifact?
 When was it used/created?
 Who was involved in this experience?
 How old were you?
 How were you involved?

2. How does this artifact demonstrate the impact that outdoor experience has had on your life as a person with diabetes?

How has it influenced how you feel towards diabetes?
 How has it influenced your diabetes management?

Conclusion Phase Script (10 minutes)

Thank you! I believe that I now have an understanding of your outdoor experiences and the ways that they have promoted the development of your self-efficacy and autonomy. I would like to briefly summarize what I have learned and to let you comment on my interpretation.

[Briefly summarize what I have learned through the interview with the participant].

Is there anything you would like to add?

Is there anything you believe I have misunderstood?

I would like to thank you very much for meeting with me today! What I have learned today will be of great value to my research. If you have any questions in the future, or if you would like to receive a copy of the findings of my study please do not hesitate to contact me via the email address provided on your informed consent.

Appendix E

Slipstream Toast

Type 1 Diabetes: A Full-Time Job (www.realitycheck.org.au)

Are you a workaholic with an interest in the health and medical professions looking for a long-term career path? Do we have a job for YOU!

We offer a lifelong opportunity for hard work and no holidays. Occasional breaks from the most 'intensive' work may be available for some individuals but workers must remain on call at all times and during all activities, including but not limited to: sleeping, intimate moments, important presentations, family emergencies and your own wedding.

This is a challenging role managing personal glucose homeostasis with defective equipment where similar actions will result in differing outcomes. We will *partly* reimburse the many expenses that you will incur. Your hard work will be rewarded by the chance that *maybe* things won't get *much* worse. The only thing we can guarantee is that no two days will be the same.

We felt that there would be some essential skills and experiences required for this role:

- A demonstrated ability to analyze and interpret complex data from multiple sources whilst taking into account varying degrees of accuracy
- The capacity to make split second decisions, many times in every hour, that cumulatively have far-reaching consequences
- A demonstrated ability to operate in a high stress environment
- Computer literacy to access basic support and information about your role

In addition, we felt that there would be some further 'desirable attributes' for anyone wishing to apply for this role. These include:

- Graduate degrees in medicine, biochemistry, physiology, chemistry, nutrition AND psychology.
- Exceptional mental arithmetic skills would also be helpful; and

- Obsessive-compulsiveness to constantly monitor, record and maintain detailed records of life events and pathology results would be highly desirable.

The ability to work within a team is ESSENTIAL for this position, in fact you will be required to form, maintain and strengthen your team which will include people from all walks of life, who speak *many different languages*: endocrinologists, GPs, diabetes educator, podiatrist, dietician, ophthalmologist, private health insurer, government, non-government organizations, pharmaceutical companies and others.

The role draws on public monies, so we will of course have some performance objectives and indicators, which must be strictly adhered to. These include:

- Daily monitoring of results must be completed consistently and within target
- Annual cycle of complication screening must be completed with clear reports for 80 years
- You will be required to deal with a group of drugs classified by the TGA as high risk - and you will be required to find ways to safely administer these drugs without serious adverse events several times every day regardless of whether you are exhausted, busy, intoxicated or unwell.
- Public scrutiny from external individuals of factors deemed to be important in the public conscience will be required, such as your choosing to eat a piece of your own birthday cake, and must be accepted with humility

Employees who meet and exceed these targets will be rewarded with:

- A widely expanded vocabulary
- An occasional sense of achievement – not always shared by your team members as they are likely to have targets which are quite different to yours.

Finally, Career progression in this role is unlimited; as the demands of this role will call into play every organ and tissue in your body. Opportunities include:

- Diabetic eye disease
- Blindness
- Gastric dysfunction

- dialysis
- erectile dysfunction
- gangrene and
- lower limb amputations.
- and, not surprisingly, clinical depression and anxiety are also opportunities.

If you are a parent, and your child would like to apply for this role, please first find the button, which makes them instantly mature by 20 or 30 years, as the child will be required to meet all of the above skills and experience from Day 1. And please see our website for explanation of your own complex role as a parent.

A sense of humour is essential.

Appendix F

Official Brock Research Ethics Board Clearance Letter



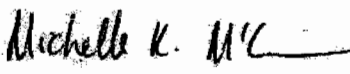
**Brock
University**

Office of Research Services
Research Ethics Office

St. Catharines, Ontario, Canada L2S 3A1
T: 905-688-5550, Ext. 3035/4876 F: 905-688-0748

www.brocku.ca

DATE: 3/1/2010

FROM: Michelle McGinn, Chair
Research Ethics Board (REB) 

TO: Dr. Mary Breunig, Department of Recreation and Leisure Studies
Jennifer Hanson

FILE: 09-160
Masters Thesis/Project

TITLE: An examination of outdoor experience in the development of character in young adults living with Type 1 diabetes

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: Accepted as clarified

This project has received ethics clearance for the period of **March 1, 2010 to March 31, 2011** subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. ***The study may now proceed.***

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and cleared by the REB. During the course of research no deviations from, or changes to, the protocol, recruitment, or consent form may be initiated without prior written clearance from the REB. The Board must provide clearance for any modifications before they can be implemented. If you wish to modify your research project, please refer to <http://www.brocku.ca/research/policies-and-forms/forms> to complete the appropriate form Revision or Modification to an Ongoing Application.

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols.

The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form *Continuing Review/Final Report* is required.

Please quote your REB file number on all future correspondence.

MM/sp